

7/1/02-02884

**QUARTERLY O&M STATUS REPORT
(APRIL 1, 2002 THROUGH JUNE 30, 2002)
AT OPERABLE UNIT 03 SITE 07
FOR THE AIR SPARGING SYSTEM
MCAS CHERRY POINT, NORTH CAROLINA**

Prepared for:


DEPARTMENT OF THE NAVY
Contract No. N62470-97-D-5000
Contract Task Order No. 0029

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July 2002

OHM/Shaw Project No. 777756

TABLE OF CONTENTS

1.0 INTRODUCTION	1-1
1.1 PURPOSE	1-1
1.2 BACKGROUND	1-1
1.3 SYSTEM DESCRIPTION	1-1
2.0 SYSTEM PERFORMANCE AND REMEDIAL OBJECTIVES	2-1
3.0 OPERATION AND MAINTENANCE SUMMARY	3-1
3.1 O&M SUMMARY	3-1
3.2 REGULAR INSPECTION PROGRAM	3-2
4.0 ANALYTICAL RESULTS	4-1
4.1 VADOSE ZONE MONITORING	4-1
4.2 GROUNDWATER SAMPLING	4-2
4.3 WELL GAUGING	4-3
5.0 CONCLUSIONS	5-1

Appendices

Appendix A	Vadose Zone Conditions, Sample Chambers SC-01 through SC-15
Appendix B	Groundwater Sample Analytical Report
Appendix C	Monitoring Well Gauging Data

List of Tables

Table 1-1	North Carolina S3 Target Concentrations for the Protection of Groundwater
Table 4-1	Groundwater Performance Standards

List of Figures

Figure 1-1	Site Location Map
Figure 1-2	Site Map
Figure 1-3	Site Plan
Figure 4-1	Groundwater Gradient Map

List of Acronyms

AS	Air Sparge
bgs	below ground surface
FID	Flame Ionization Detector
MCAS	Marine Corps Air Station
µg/L	micrograms per liter
NCDENR	North Carolina Department of Environmental and Natural Resources
O&M	Operations and Maintenance
OU 3	Operable Unit 3
ppm	parts per million
ROD	Record of Decision
STP	Sewage Treatment Plant
SVOC	Semi-Volatile Organic Compounds
VOC	Volatile Organic Compound

1.0 INTRODUCTION

1.1 PURPOSE

This quarterly Operation and Maintenance (O&M) Status Report has been prepared to summarize the Marine Corps Air Station (MCAS) Cherry Point, North Carolina performance of the Operable Unit 3 (OU 3) Site 07 Air Sparge (AS) system from April 1, 2002, through June 30, 2002. OHM Remediation Services, Inc. (OHM/Shaw), conducts the O&M activities for this facility under Task Order No. 0029 of the Navy/Atlantic Division (LANTDIV) RAC Contract No. N62470-97-D-5000.

1.2 BACKGROUND

Site 07 was an incinerator and open burning ground that encompassed approximately 5 acres. Site 07 is bounded by the Sewage Treatment Plant (STP) to the south, Luke Rowe's Gut to the north, and Slocum Creek to the west (**Figure 1-1**). The former incinerator was located adjacent to Luke Rowe's Gut in the eastern portion of the site. The open burning area lies on the southern bank of the confluence of Luke Rowe's Gut and Slocum Creek. There is an existing wetlands area located to the north of OU3 Site 07 (**Figure 1-2**).

An AS system was installed by OHM/Shaw beginning January 4, 2000. The system commenced start-up on March 13, 2000. The treatment system installation was implemented to address cleanup of soil impacted with benzene. The goal of the clean-up effort is to meet or exceed the performance standards for soil concentrations as established in the ROD.

1.3 SYSTEM DESCRIPTION

The AS system is comprised of (46) air sparge wells and (21) soil vapor monitoring points (**Figure 1-3**). The air sparging wells were installed to a depth of 15 feet below ground surface (bgs). The AS wells are constructed of 1-inch diameter PVC casing with 0.010-inch slot PVC well screen. The AS equipment is comprised of a screw air compressor capable of delivering 15 psi for air sparging. The effective radius of influence for each sparge well is approximately 15 feet. The AS system operates continuously 24 hours per day, seven days per week.

2.0 SYSTEM PERFORMANCE AND REMEDIAL OBJECTIVES

The remedial objective of this system is to reduce the contaminant concentrations in the soil via direct volatilization and through enhancement of biological degradation. The AS system is to be applied to the soils until they comply with the performance standards that have been established in the Record of Decision (ROD) (August, 2000).

There are two issues to be addressed at the OU 3, Site 07. There are traces of benzene in groundwater and the presence of the same compound in soils at concentrations, which could remain a source for groundwater contamination. Thus the remedy must address both soil and groundwater. The primary objective of the remediation system is to mitigate further contamination of the groundwater from benzene trapped in the soils.

The remedial objectives for the OU 3 Site 07 were defined in the ROD (August 2000) as North Carolina Department of Environmental and Natural Resources (NCDENR) S3 Target Concentrations for Protection of Groundwater. The AS remedy must address the benzene in the soil as a secondary source to groundwater. Benzene is a concern but addressed as a candidate for Natural Attenuation in the ROD (Table 11-1). Maximum contaminant levels and the performance standard for soil are listed in Table 1-1.

Table 1-1 North Carolina S3 Target Concentrations for the Protection of Groundwater		
Contaminants	Site Conditions Maximum Soil Concentration (µg/kg)	Performance Standard for Soil (µg/kg)
Benzene	680 ¹	5.6

¹ Reprinted from Table 1-2 OU3 Site 7 Soil Sampling Results – January 2000 (Baseline Data).

3.0 OPERATION AND MAINTENANCE SUMMARY

3.1 O&M SUMMARY

The system was operated maintained in accordance with the Operations and Maintenance Manual, dated May 2000. Currently the system is operating in the following configuration:

- Air sparge wells currently in use; 7AS10, 7AS11, 7AS12, 7AS13, 7AS14, 7AS16, 7AS17, 7AS18, 7AS19, 7AS20, 7AS21, 7AS22, 7AS23, 7AS24, 7AS25, 7AS26, 7AS27, 7AS28, 7AS29, 7AS30, 7AS31, 7AS33, 7AS34, 7AS35, 7AS36, 7AS37, 7AS38.
- Air sparge wells currently not in operation 7AS05, 7AS06, 7AS07, 7AS09, 7AS15, 7AS32, 7AS39, 7AS40, 7AS41, 7AS42, 7AS43, 7AS44, and 7AS45.

The system has been operating in this configuration since March 13, 2001. Beginning June 18, 2002, five additional AS wells (labeled A through E) commenced operation.

The AS remedy must address the benzene in the soil as a secondary source to groundwater. The system modifications (per the Memorandum of operations March 22, 2001) were installed in June 2002 to further enhance recovery/ remediation of the benzene in soil to below the performance standard in the areas where benzene still exceeds the standard. Operations and maintenance on equipment that is having no apparent further beneficial use towards specific reduction in benzene in soil is unnecessary. Specific air sparge wells are shut off to save wear and tear on equipment in areas where the soil concentration of benzene is below the standard.

The following list summarizes the operational and maintenance highlights of the remediation system during the fourth quarter. These highlights represent major items only and dates not noted represent times when the system was operated as designed. At least once per week the oil levels and belt integrity are checked and the system components are checked to make sure no lines, gauges or flow meters are broken or damaged.

- **March 29, 2002.** System components were painted.
- **April 26, 2002.** Completed monthly data collection. Liquid levels were measured in the nearby monitoring wells.
- **May 13, 2002.** Greased bearings and all fittings.

- **June 4, 2002.** Crew performed clearing and grubbing of the site in preparation for the installation of one groundwater monitoring well, 5 AS wells and 6 sample gas chambers. The 5 AS wells were drilled and installed.
- **June 12, 2002.** The additional AS wells (labeled A through E) were installed.
- **June 14, 2002.** The additional sample gas chambers (labeled SC-16 through SC-21) were installed.

During the reporting of April 1, 2002, through June 30, 2002 the system was in operation 1,297 hours of the 2,208 available hours or 58.7 percent of the time.

3.2 REGULAR INSPECTION PROGRAM

A regular inspection schedule was followed including monthly measurements of volatile organic compounds (VOC) with a flame ionization detector (FID).

The monthly VOC measurements are made at each of the 21 individual soil gas sample chambers SC-01 through SC-21. **Figure 1-3** depicts the distribution of the air sparge wells and associated piping, sample chambers and groundwater monitoring wells.

4.0 ANALYTICAL RESULTS

4.1 VADOSE ZONE MONITORING

In order to monitor the performance of the air sparge system, vapor monitoring of the 15 soil gas chambers has been performed since March 13, 2000. Beginning on June 18, 2002, 6 additional soil gas chambers were sampled along with the original 15 units. These 6 additional soil gas chambers were installed in order to monitor activities associated with the installation of AS wells A through E. The vapor concentrations were traditionally measured using a FID monthly. In the month of June 2002, the sample frequency was increased in order to gather additional data on the 6 new sample chambers. The VOC concentrations in the soil gas chambers SC-01 through SC-15 ranged from non-detect to 56.4 parts per million (ppm) in sample chamber SC-07 for the quarter ending June 30, 2002. The VOC concentrations in the soil gas chambers SC-16 through SC-21 ranged from 14.4 ppm in SC-18 to 766.4 ppm in SC-19 for the quarter ending June 30, 2002. **Appendix A** presents the vadose zone conditions measured in all of the sample chambers at the site since the system was started on March 13, 2000.

The VOC concentrations measured show an overall decrease since the start up of the system in the original 15 sample chambers. A decrease in the VOC concentration can also be attributed to an increase in the aerobic biodegradation. The increase in aerobic biodegradation of VOCs can be attributable to the addition of oxygen to the subsurface. There is insufficient data from the 6 new sample chambers to determine the trend of VOC concentrations in the subsurface.

The oxygen concentration will show the relative degree of aerobic biodegradation in the subsurface. Oxygen concentrations approaching 20.9%, in this case, which are ambient atmospheric conditions, more than likely indicate that the rate of aerobic biodegradation is decreasing with the decrease in available hydrocarbons. This decrease in volatile hydrocarbons is supported by the measurement of VOCs with a FID at the sample chambers. A lower oxygen concentration would indicate that microbes are utilizing the oxygen for the biodegradation petroleum hydrocarbons. The oxygen concentrations measured the original 15 sample chambers at the site show an overall increase since these measurements were collected on May 12, 2000.

4.2 GROUNDWATER SAMPLING

Groundwater samples were collected from monitoring well 7-GW09 on June 20, 2002. The groundwater samples were analyzed for the presence of semi-volatile organic compounds (SVOCs) by EPA Method SW846 8270C. Analytical results indicate that dissolved-phase SVOC concentrations were non detect in well 7-GW09. The groundwater sample collected in the field blank contained 1.6 micrograms per liter (µg/L) 1,1-dichloroethylene. The 1,1-dichloroethylene concentration reported was less than the reporting limit and greater than the method detection limit so the data was flagged with a J. There was no 1,1-dichloroethylene detected in the laboratory method blank, nor in any of the other samples. Since this compound was only detected in the field blank and not in the actual groundwater samples and the concentration was an estimate (J Flagged) we view the value as an anomaly, which should have no impact on the data. The analytical results are contained in **Appendix B. Table 4-1** presents the Groundwater Performance Standards for Operable Unit 3, MCAS Cherry Point, North Carolina.

Table 4-1⁽¹⁾
GROUNDWATER PERFORMANCE STANDARDS
OPERABLE UNIT 3
MCAS CHERRY POINT, NORTH CAROLINA

Contaminant	Performance Standard ⁽²⁾
Volatile organics (µg/L)	
Benzene	1.0
Vinyl chloride	0.015
Semi volatile Organics (µg/L)	
Bis(2-ethylhexyl)phthalate	3.0
2-Methylnapthalene	28 ⁽³⁾
Pentachlorophenol	0.3
Pesticides (µg/L)	
4,4'-DDT	0.1 ⁽⁴⁾
Dieldrin	0.0022
Endosulfan I	<DL ⁽⁵⁾
Metals (µg/L)	
Barium	2,000
Cadmium	5.0
Iron	300
Lead	15
Manganese	50

Notes:

1. This table is a copy from Rev 6. August 2000 OU-3 ROD (Table 11-1 pp 11-4).
2. North Carolina Class GA Groundwater Standard. The standards have been update since the RI and FS were prepared. Consequently, the values presented here are different than the values presented on Tables 6-5, 6-6, 6-7, 8-7, 8-8 and 8-15.
3. This standard for 2-methylnaphthalene has changed since the preparation of the RI and FS. The maximum detected concentration for 2-methylnaphthalene was 18 g/l and no longer exceeds the standard.
4. This standard for 4,4'-DDT has changed since the preparation of the RI and FS. The maximum detected concentration for 4,4'-DDT was 0.043 µg/L and no longer exceeds the standard.
5. <DL – Less than detection limit.

As noted in **Table 4-1** the performance standards did not indicate an exceedence of the groundwater standards in these wells.

4.3 WELL GAUGING

Select monitoring wells were last gauged for depth-to-water on April 26, 2002. **Appendix C** summarizes the data collected during this reporting period. Groundwater elevation directly influences the vapor dispersion in the vadose zone. The groundwater elevation in conjunction with the sparging air distribution will affect mass removal and/or degradation of the VOCs within the vadose zone.

Measurements of depth to water were collected using an electronic water/oil interface probe. The April 26, 2002 well gauging data was used to construct a groundwater gradient map. As referenced in **Figure 4-1**, the groundwater flow direction across the site on April 26, 2002 was towards the north. The hydraulic gradient across the site is 0.07 ft/ft.

5.0 CONCLUSIONS

The Site 07 AS system was in operation to address soil contamination at the site. During the reporting of April 1, 2002, through June 30, 2002 the system was in operation 1,297 hours of the 2,208 available hours or 58.7 percent of the time. The system was off June 4, 2002 through June 18, 2002 to facilitate system expansion. The vapor-phase VOC concentrations were measured in soil gas chambers at 21 locations in the vadose zone using a FID. The VOC concentrations measured are continuing to decrease across the site over time.

The decrease in the VOC concentration can be potentially attributed to an increase in the aerobic biodegradation. The purpose of the air sparge system is to provide air and subsequently oxygen to assist in or further promote aerobic biodegradation of VOCs. The sparging is adding air to the subsurface and based on the sample chamber oxygen fluctuations, inference to the sparging having a positive influence on biodegradation can be made.

A groundwater samples was collected from monitoring well 7-GW09 on June 20, 2002. The groundwater sample was analyzed for the presence of semi-volatile organic compounds (SVOCs) by EPA Method SW846 8270C. Analytical results indicate that dissolved-phase SVOC concentrations were non detect. The groundwater sample collected as the field blank contained 1.6 µg/L 1,1-dichloroethylene. There was no 1,1-dichloroethylene detected in the laboratory method blank, nor in any of the other samples. Since this compound was only detected in the field blank and not in the actual groundwater samples and the concentration was an estimate (J Flagged) we view the value as an anomaly, which should have no impact on the data.

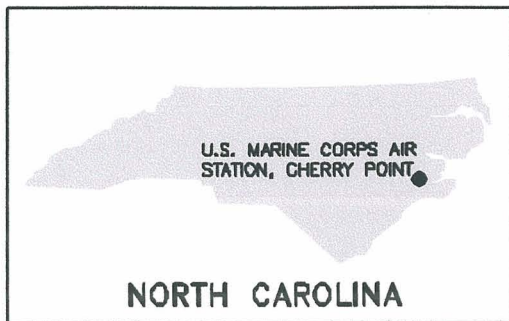
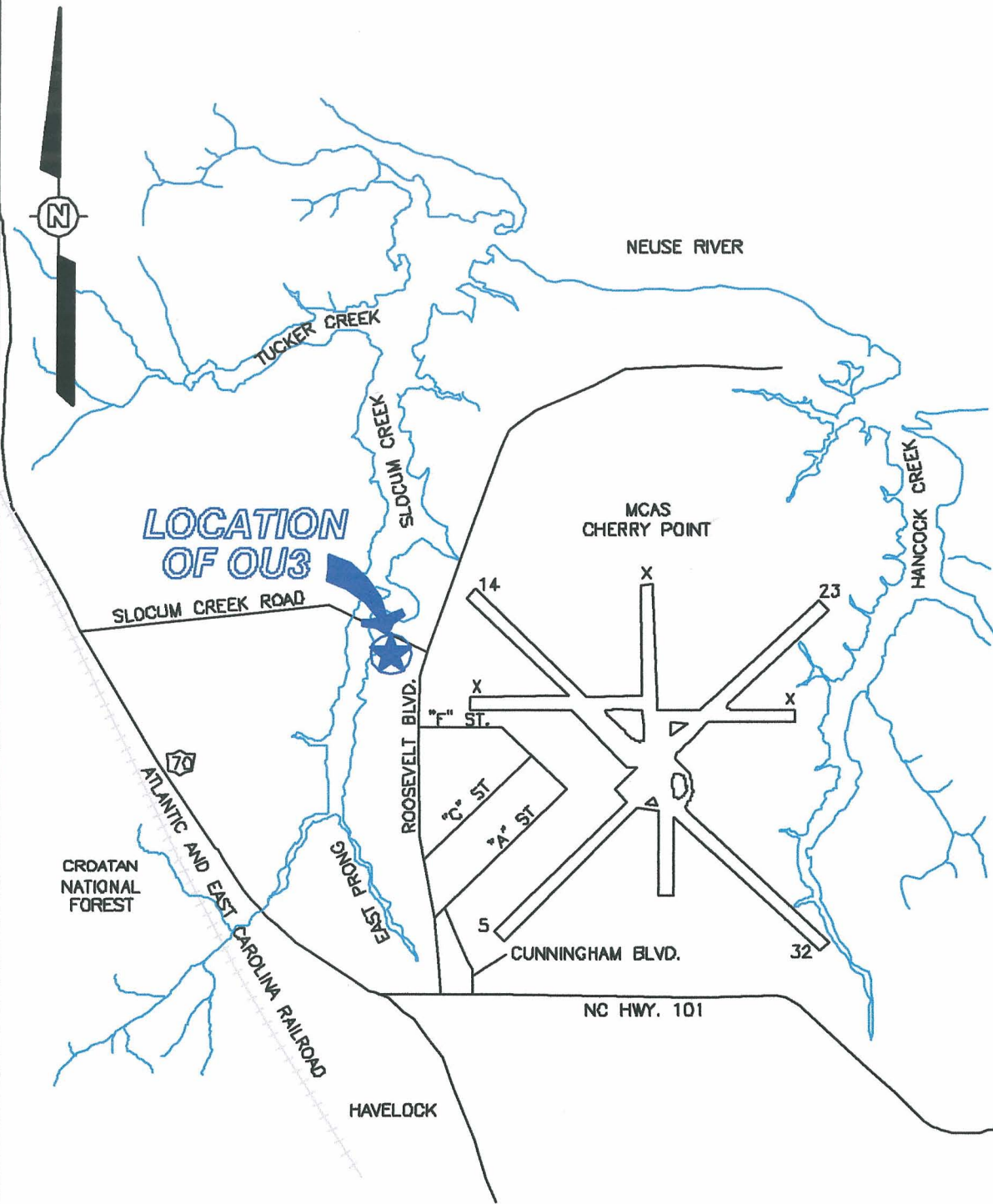
Groundwater at the site is addressed under the RD/RA for OU3 whereas the proposed remedy is monitoring natural attenuation (MNA) for groundwater at the site. Implementation of the MNA remedy for groundwater at OU3 is currently in the final stages of development. Groundwater data recorded as a result of required sampling for OU3 Site 7 soils (Primary treatment by low flow air sparging) will continue to be reported here though the system's primary function is the treatment of soil. Collaboration of this data and information is accomplished through the partnering team for MCAS Cherry Point.

On April 26, 2002, the monitoring wells at the site were gauged. The groundwater flow direction was towards the north at a gradient of 0.07 ft/ft based on this gauging data.

Figures

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 Format Revised: 12/15/99 Xref: .

OFFICE DRAWING NUMBER
 Pittsburgh, PA 77756-A1



OHM Remediation Services Corp.
 PROJECT NO. 77756

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL DIVISION
 ATLANTIC DIVISION
 MARINE CORPS AIR STATION
 CHERRY POINT, NORTH CAROLINA
 RD/RA AIR SPARGE SYSTEM
 OU3 - SITE 7
 VICINITY MAP

SCALE
 AS SHOWN
 DELIVERY ORDER NO.
 0010
 CONSTR. CONTRACT NO.
 N62470-87-D-5000
 NAVAL INVOICE NO.
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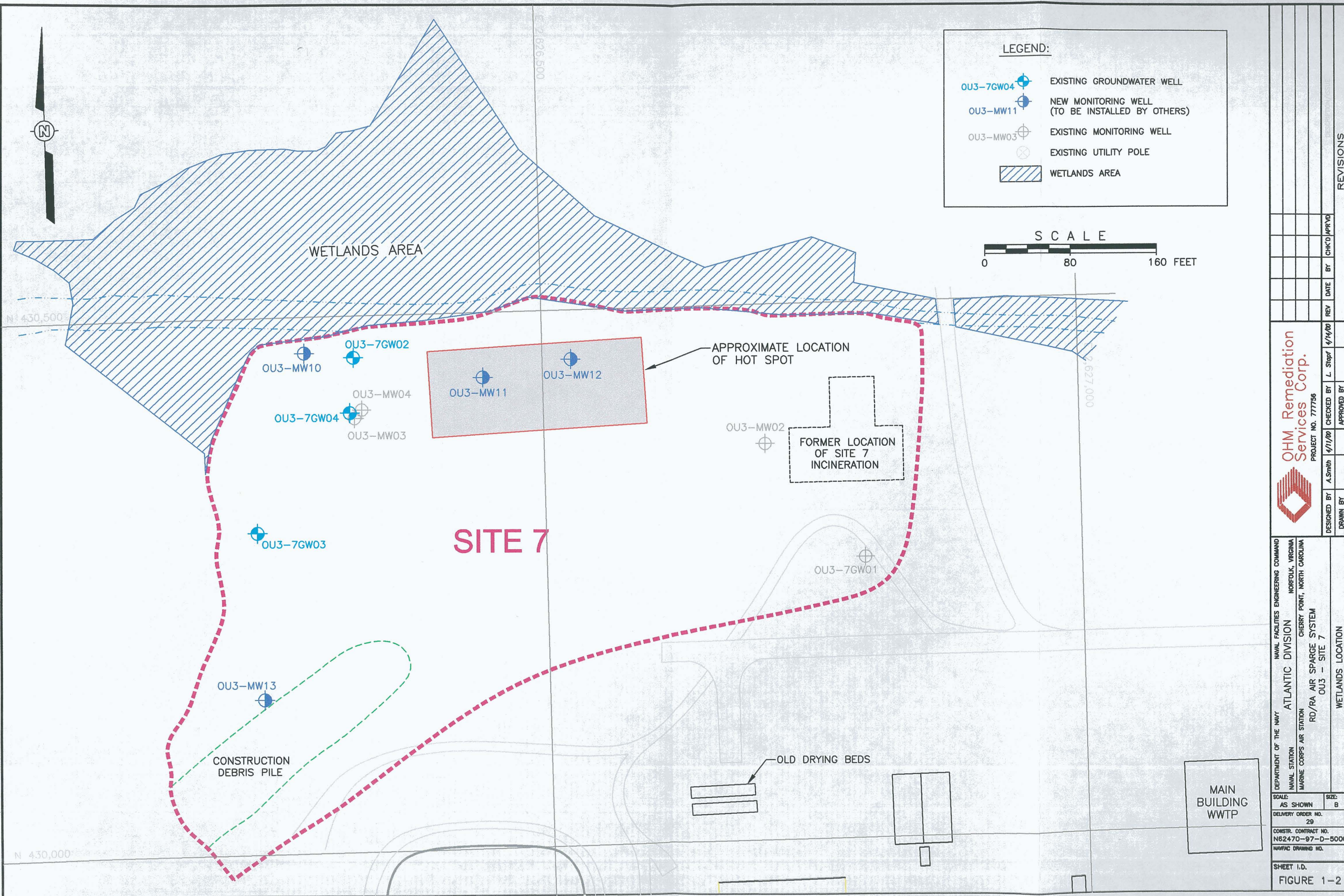
SHEET NO. 1

Figure 1-1

REVISIONS				DESCRIPTION/ISSUE
REV	DATE	BY	CHK'D	APPROV'D
1	4/14/99			
2				
3				
4				
5				
6				
7				
8				
9				
10				

DESIGNED BY
 A. Smith
 CHECKED BY
 L. Step
 4/16/99
 APPROVED BY

DRAWN BY



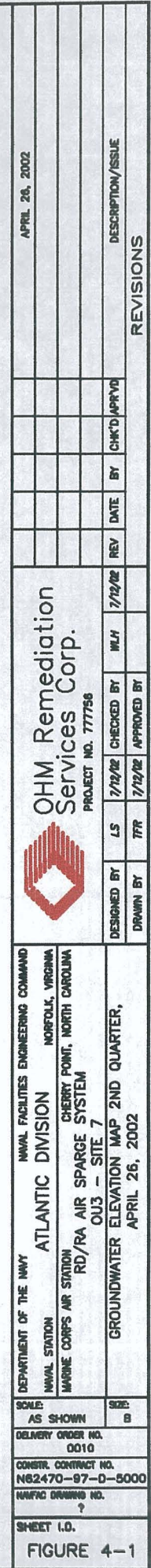
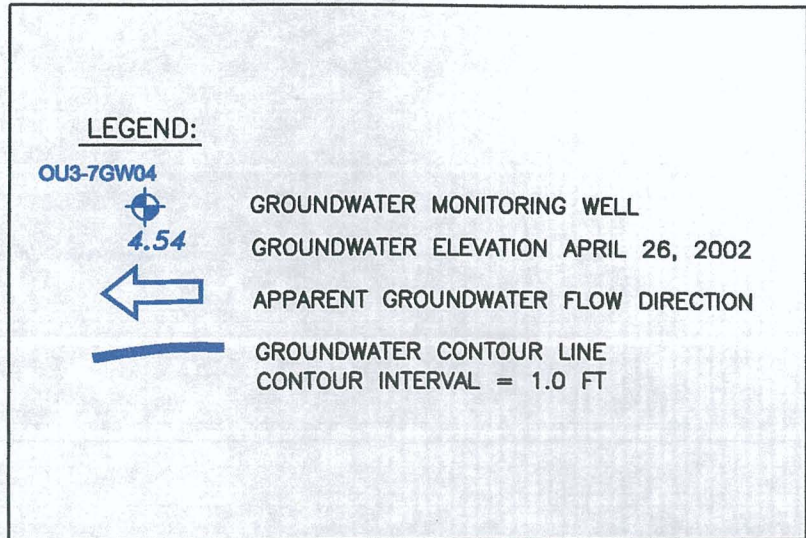
DEPARTMENT OF THE NAVY		NAVAL FACILITIES ENGINEERING COMMAND	
ATLANTIC DIVISION		NORFOLK, VIRGINIA	
NAVAL STATION		CHERRY POINT, NORTH CAROLINA	
MARINE CORPS AIR STATION		RD/RA AIR SPARGE SYSTEM	
		OU3 - SITE 7	
		WETLANDS LOCATION	
SCALE:		SIZE:	
AS SHOWN		B	
DELIVERY ORDER NO.			
29			
CONSTR. CONTRACT NO.			
N62470-97-D-5000			
NAVFAC DRAWING NO.			
SHEET I.D.			
FIGURE 1-2			

OHM Remediation Services Corp.
PROJECT NO. 777756

DESIGNED BY	APPROVED BY
A.Smith	
CHECKED BY	
L. Stapp	

REV	DATE	BY
4/14/00	4/14/00	CHK'D APPROV

REVISIONS



Appendix A

Vadose Zone Conditions

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC01	03/13/00	69.3	-	
	03/13/00	41	-	
	03/14/00	1,581	-	
	03/15/00	1,487	-	
	03/16/00	1,603	-	
	03/20/00	131	-	
	03/21/00	142	-	
	03/22/00	83.4	-	
	03/29/00	8.5	-	
	03/31/00	28.5	-	
	04/04/00	19.2	-	
	04/07/00	35.7	-	
	04/11/00	35.7	-	
	04/14/00	35.4	-	
	05/01/00	64	-	
	05/16/00	3.7	-	
	05/19/00	24	-	
	06/01/00	7.2	21.4	
	06/14/00	5.4	20.6	
	06/30/00	4.4	20.6	
	07/31/00	18.2	20.6	
	08/30/00		20.7	
	12/08/00	1.5	20.4	
	01/31/01	2.4	20.8	
	03/14/01	7.9	19.7	
	03/16/01	5.7	19.7	
	03/31/01	7.2	19.6	
	04/19/01	0.4	21	
	04/25/01	1.1	21	
	05/09/01	9.6	20.2	
	05/29/01	1.1	21	
	06/28/01	0.4	21	
	07/26/01	0.4	21	
	08/23/01	0	21	
	09/20/01	0	21	
	10/15/01	0	21	
	11/21/01	0.9	20.3	
	12/17/01	1.2	20.9	
	01/21/02	0.9	20.6	
	02/27/02	0.9	21	
	03/14/02	0	21	
	04/26/02	0	21	
	05/30/02	0	21	
	06/28/02	0.8	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC02	13-Mar-00	169.4	-	
	13-Mar-00	67	-	
	14-Mar-00	4,723	-	
	15-Mar-00	4,824	-	
	16-Mar-00	5,102	-	
	20-Mar-00	4,620	-	
	21-Mar-00	501	-	
	22-Mar-00	279	-	
	29-Mar-00	192	-	
	31-Mar-00	230	-	
	4-Apr-00	55	-	
	7-Apr-00	71	-	
	11-Apr-00	71	-	
	14-Apr-00	48	-	
	1-May-00	54	-	
	12-May-00	12	9	
	16-May-00	56.9	9.9	
	19-May-00	49	10.6	
	01-Jun-00	5.7	13.9	
	30-Jun-00	2	16	
	31-Jul-00	14	18.2	
	30-Aug-00	1.2	19.5	
	8-Nov-00	0	19.7	
	8-Dec-00	1.5	20.4	
	29-Dec-00	3.1	20.9	
	31-Jan-01	0	20.8	
	28-Feb-01	0.8	21	
	13-Mar-01	3	20.1	
	14-Mar-01	26.3	19.5	
	16-Mar-01	22	19.4	
	19-Apr-01	0	21	
	25-Apr-01	0.4	21	
	9-May-01	2.4	19.6	
	29-May-01	0	21	
	28-Jun-01	0	21	
	26-Jun-01	0	21	
	23-Aug-01	0.1	21	
	20-Sep-01	0	21	
	15-Oct-01	0	21	
	21-Nov-01	3	19	
	17-Dec-01	2.8	19.6	
	21-Jan-02	3	20.4	
	27-Feb-02	3	20.9	
	14-Mar-02	0	21	
	26-Apr-02	0	21	
	30-May-02	0	21	
	28-Jun-02	0	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC03	13-Mar-00	5985	-	
	13-Mar-00	1107	-	
	14-Mar-00	12,347	-	
	15-Mar-00	12,450	-	
	16-Mar-00	12,667	-	
	20-Mar-00	4,730	-	
	21-Mar-00	4,629	-	
	22-Mar-00	0	-	
	29-Mar-00	1,937	-	
	31-Mar-00	21,221	-	
	4-Apr-00	10,987	-	
	7-Apr-00	3,374	-	
	11-Apr-00	3,374	-	
	14-Apr-00	0	-	
	1-May-00	797	-	
	12-May-00	1,897	5	
	16-May-00	1841	8.7	
	19-May-00	3019	10.6	
	01-Jun-00	6.2	21	
	30-Jun-00	440	12	
	31-Jul-00	172.4	18.3	
	30-Aug-00	5.7	20	
	8-Nov-00	5	18.9	
	8-Dec-00	0	20.8	
	29-Dec-00	3.2	20.9	
	31-Jan-01	1.8	20.8	
	28-Feb-01	0.9	20.9	
	13-Mar-01	0	20.8	
	14-Mar-01	4.5	20.8	
	16-Mar-01	4.5	20.8	
	19-Apr-01	1.1	20.8	
	25-Apr-01	1.1	20.9	
	9-May-01	1.8	19.7	
	29-May-01	1.4	20.1	
	28-Jun-01	0.8	20.6	
	26-Jul-01	0.9	21	
	23-Aug-01	1.6	21	
	20-Sep-01	1.2	20.8	
	15-Oct-01	0.4	21	
	21-Nov-01	4	20	
	17-Dec-01	5.1	21	
	21-Jan-02	4	21	
	27-Feb-02	4	21	
	14-Mar-02	0.9	21	
	26-Apr-02	0	21	
	30-May-02	0	21	
	28-Jun-02	0	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC04	13-Mar-00	9402		
	13-Mar-00	2204		
	14-Mar-00	2,905		
	15-Mar-00	2,878		
	16-Mar-00	31,200		
	20-Mar-00	50,000		
	21-Mar-00	50,000		
	22-Mar-00			
	29-Mar-00	22,665		
	31-Mar-00	32,500		
	4-Apr-00	21,586		
	7-Apr-00	35,204		
	11-Apr-00	35,204		
	14-Apr-00			
	1-May-00	1,146		
	12-May-00	13,192	13	
	16-May-00	9074	14.2	
	19-May-00	1172	14.1	
	01-Jun-00	1,301	19.8	
	30-Jun-00	4	14	
	31-Jul-00	726	17.3	
	30-Aug-00	501	17.8	
	8-Nov-00	64.1	18.6	
	8-Dec-00	0	19.6	
	29-Dec-00	8.2	20.8	
	31-Jan-01	15.6	20.8	
	28-Feb-01	5.5	19.2	
	13-Mar-01	34.3	18	
	14-Mar-01	63.7	18.4	
	16-Mar-01	33	18	
	19-Apr-01	7.2	18.9	
	25-Apr-01	7.2	20.9	
	9-May-01	4.2	19.1	
	29-May-01	11.9	18.7	
	28-Jun-01	19.6	18.4	
	26-Jul-01	9.4	17.6	
	23-Aug-01	10.4	18.1	
	20-Sep-01	12.8	19.9	
	15-Oct-01	14.1	19.6	
	21-Nov-01	2.9	17.6	
	17-Dec-01	3.8	17.4	
	21-Jan-02	2.9	18.8	
	27-Feb-02	2.9	19.9	
	14-Mar-02	1.1	21	
	26-Apr-02	2.1	21	
	30-May-02	2.2	21	
	28-Jun-02	0	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC05	13-Mar-00	68.1		
	13-Mar-00	42.0		
	14-Mar-00			
	15-Mar-00	3107.0		
	16-Mar-00	3200.0		
	20-Mar-00	1091.0		
	21-Mar-00	1101.0		
	22-Mar-00	482.1		
	29-Mar-00	193.7		
	31-Mar-00	789.0		
	4-Apr-00	552.0		
	7-Apr-00	238.0		
	11-Apr-00	238.0		
	14-Apr-00	39.7		
	1-May-00	57.0		
	12-May-00	78.2	4.5	
	16-May-00	49.0	6.3	
	19-May-00	95.1	8.8	
	01-Jun-00	35.7	8.5	
	30-Jun-00	21.0	10.0	
	31-Jul-00	87.0	10.6	
	30-Aug-00	9.2	17.8	
	8-Nov-00	12.4	18.9	
	8-Dec-00	13	17.2	
	29-Dec-00	6.2	17.6	
	31-Jan-01	3.3	17.6	
	28-Feb-01	3.7	15.1	
	13-Mar-01	10.2	16.6	
	14-Mar-01	20.3	18.3	
	16-Mar-01	17	10.2	
	19-Apr-01	2.2	17.2	
	25-Apr-01	4.6	14.2	
	9-May-01	24.4	18.6	
	29-May-01	4.1	18.4	
	28-Jun-01	7.4	19.2	
	26-Jul-01	4.1	19.9	
	23-Aug-01	4.6	18.9	
	20-Sep-01	7.2	19	
	15-Oct-01	3.8	18.7	
	21-Nov-01	5.1	21	
	17-Dec-01	2.6	21	
	21-Jan-02	3	21	
	27-Feb-02	3	21	
	14-Mar-02	1	20.8	
	26-Apr-02	1.6	21	
	30-May-02	3.7	21	
	28-Jun-02	0	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC06	13-Mar-00	253.2		
	13-Mar-00	97		
	14-Mar-00	17,986		
	15-Mar-00	16,787		
	16-Mar-00	17,467		
	20-Mar-00	26,682		
	21-Mar-00	27		
	22-Mar-00			
	29-Mar-00	4,293.0		
	31-Mar-00	13,721		
	4-Apr-00	2,216		
	7-Apr-00	1,992		
	11-Apr-00	1,992		
	14-Apr-00	179		
	1-May-00	112		
	12-May-00	585.7	17.2	
	16-May-00	583.3	16	
	19-May-00	629.2	17.3	
	01-Jun-00	479	19.1	
	30-Jun-00	120	12.3	
	31-Jul-00	98.9	19.2	
	30-Aug-00	1.5	18.7	
	8-Nov-00	8.4	14.6	
	8-Dec-00	15.6	20.0	
	29-Dec-00	7.1	20.8	
	31-Jan-01	7.2	20.8	
	28-Feb-01	8.2	20.9	
	13-Mar-01	27.4	16.2	
	14-Mar-01	15.3	20.4	
	16-Mar-01	14.4	14.2	
	19-Apr-01	11.1	20.8	
	25-Apr-01	9.7	20.8	
	9-May-01	0	17.7	
	29-May-01	47	17	
	28-Jun-01	51.6	17.1	
	26-Jul-01	42.8	18.8	
	23-Aug-01	37.9	18.6	
	20-Sep-01	27.2	18.9	
	15-Oct-01	31.4	18.6	
	21-Nov-01	7.1	20.8	
	17-Dec-01	1.4	20.7	
	21-Jan-02	2	21	
	27-Feb-02	2	21	
	14-Mar-02	4.7	20.9	
	26-Apr-02	6.2	20.7	
	30-May-02	5.8	21	
	28-Jun-02	11.1	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC07	13-Mar-00	3664		
	13-Mar-00	497		
	14-Mar-00	9,989		
	15-Mar-00	9,104		
	16-Mar-00	10,421		
	20-Mar-00	20,185		
	21-Mar-00	20,125		
	22-Mar-00			
	29-Mar-00	15,987		
	31-Mar-00	17,434		
	4-Apr-00	50,000		
	7-Apr-00	50,000		
	11-Apr-00	50,000		
	14-Apr-00	11,746		
	1-May-00	2,037		
	12-May-00	2,580	15.4	
	16-May-00	1,417	16	
	19-May-00	1221	17.4	
	01-Jun-00	589	18.9	
	30-Jun-00	2	17.5	
	31-Jul-00	146.4	17.4	
	30-Aug-00	1.7	18.9	
	8-Nov-00	10.9	20.2	
	8-Dec-00	11.2	20.2	
	29-Dec-00	7.6	20.8	
	31-Jan-01	6.1	20.8	
	28-Feb-01	2.6	20.7	
	13-Mar-01	81	13.3	
	14-Mar-01	26.9	20.1	
	16-Mar-01	24	20	
	19-Apr-01	3.1	21	
	25-Apr-01	2.2	21	
	9-May-01	665.1	14.1	
	29-May-01	210.8	20.8	
	28-Jun-01	149.6	21	
	26-Jul-01	111.6	20.5	
	23-Aug-01	148.7	21	
	20-Sep-01	188.8	21	
	15-Oct-01	249.6	21	
	21-Nov-01	7.7	20.1	
	17-Dec-01	36.4	21	
	21-Jan-02	27.8	20.6	
	27-Feb-02	27.8	21	
	14-Mar-02	15.2	21	
	26-Apr-02	27.8	21	
	30-May-02	39.6	20.1	
	28-Jun-02	56.4	19.4	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC08	13-Mar-00	6567		
	13-Mar-00	947		
	14-Mar-00	7,646		
	15-Mar-00	7,745		
	16-Mar-00	6,407		
	20-Mar-00	28,791		
	21-Mar-00	27,789		
	22-Mar-00			
	29-Mar-00	6,035		
	31-Mar-00	8,340		
	4-Apr-00	18,786		
	7-Apr-00	17,648		
	11-Apr-00	17,648		
	14-Apr-00			
	1-May-00	1,056		
	12-May-00	5,493	15.4	
	16-May-00	3814	8.6	
	19-May-00	3197	8.8	
	01-Jun-00	208	6.7	
	30-Jun-00	221	10.4	
	31-Jul-00	16.1	7.6	
	30-Aug-00	455	13.6	
	8-Nov-00	33.6	20.2	
	8-Dec-00	0	18.5	
	29-Dec-00	32.5	19.5	
	31-Jan-01	14.6	19.8	
	28-Feb-01	5.5	19.7	
	13-Mar-01	123	10.8	
	14-Mar-01	21.6	19.6	
	16-Mar-01	15.3	20.5	
	19-Apr-01	6.8	19.9	
	25-Apr-01	4.3	18.8	
	9-May-01	19.6	19.7	
	29-May-01	4.9	20.1	
	28-Jun-01	6.2	21	
	26-Jul-01	6.2	21	
	23-Aug-01	6.9	21	
	20-Sep-01	11.1	21	
	15-Oct-01	14.1	21	
	21-Nov-01	2.8	20.4	
	17-Dec-01	0.8	20.1	
	21-Jan-02	1	20.7	
	27-Feb-02	1	21	
	14-Mar-02	0	21	
	26-Apr-02	0.9	20.1	
	30-May-02	0	19.9	
	28-Jun-02	0	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC09	13-Mar-00	140.6		
	13-Mar-00	69		
	14-Mar-00	1,248		
	15-Mar-00	1,304		
	16-Mar-00	1,297		
	20-Mar-00	12,971		
	21-Mar-00	12,659		
	22-Mar-00	20,471		
	29-Mar-00	7,216		
	31-Mar-00	8,139		
	4-Apr-00	1,070		
	7-Apr-00	987		
	11-Apr-00	987		
	14-Apr-00			
	1-May-00	113		
	12-May-00	363.7	6.8	
	16-May-00	2242	13.4	
	19-May-00	1623	16.4	
	01-Jun-00	201	15.6	
	30-Jun-00	530	13.8	
	31-Jul-00	2	16.4	
	30-Aug-00	1.1	20.1	
	8-Nov-00	25.5	18.8	
	8-Dec-00	13.8	20.4	
	29-Dec-00	5.5	20.8	
	31-Jan-01	3.9	20.8	
	28-Feb-01	7.2	20.2	
	13-Mar-01	31.2	20.4	
	14-Mar-01	17.3	20.3	
	16-Mar-01	15.3	20.5	
	19-Apr-01	4.3	21	
	25-Apr-01	8.2	20.1	
	9-May-01	44.2	18.4	
	29-May-01	14.2	21	
	28-Jun-01	12.4	21	
	26-Jul-01	14.7	21	
	23-Aug-01	11.6	21	
	20-Sep-01	4.2	21	
	15-Oct-01	7.8	21	
	21-Nov-01	4.1	20.9	
	17-Dec-01	1.1	19.8	
	21-Jan-02	0.9	18.8	
	27-Feb-02	0.9	19.9	
	14-Mar-02	1.4	20.6	
	26-Apr-02	1.2	20	
	30-May-02	1.9	20.1	
	28-Jun-02	3.1	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC-10	13-Mar-00	77.9		
	13-Mar-00	42		
	14-Mar-00	9,947		
	15-Mar-00	9,867		
	16-Mar-00	9,767		
	20-Mar-00	33,559		
	21-Mar-00	34,102		
	22-Mar-00			
	29-Mar-00	40,268		
	31-Mar-00	41,394		
	4-Apr-00	41,974		
	7-Apr-00	50,000		
	11-Apr-00	50,000		
	14-Apr-00	21,767		
	1-May-00	12,612		
	12-May-00	6,676	12.3	
	16-May-00	5375	13.3	
	19-May-00	4610	14.4	
	01-Jun-00	6,308	15.4	
	30-Jun-00	1,572	16.8	
	31-Jul-00	761	15.7	
	30-Aug-00	679	14.4	
	8-Nov-00	48.7	18.4	
	8-Dec-00	55.7	19.1	
	29-Dec-00	14.8	20	
	31-Jan-01	34.2	20.8	
	28-Feb-01	13.2	20.3	
	13-Mar-01	25.6	17.8	
	14-Mar-01	19.6	16.7	
	16-Mar-01	14.7	19.8	
	19-Apr-01	17.8	21	
	25-Apr-01	16.1	19.9	
	9-May-01	21.8	18.7	
	29-May-01	17.4	21	
	28-Jun-01	13.2	21	
	26-Jul-01	11.9	21	
	23-Aug-01	10.9	21	
	20-Sep-01	0.1	21	
	15-Oct-01	10.4	21	
	21-Nov-01	10.4	20.9	
	17-Dec-01	2.4	19.7	
	21-Jan-02	2	20.1	
	27-Feb-02	2	20	
	14-Mar-02	4.2	20.2	
	26-Apr-02	5.7	19.9	
	30-May-02	7.6	19.8	
	28-Jun-02	0	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC-11	13-Mar-00	61.4		
	13-Mar-00			
	14-Mar-00	72		
	15-Mar-00	2,102		
	16-Mar-00	2,937		
	20-Mar-00	50,000		
	21-Mar-00	50,000		
	22-Mar-00	6,739		
	29-Mar-00	2,238		
	31-Mar-00	31,638		
	4-Apr-00	9,545		
	7-Apr-00	11,729		
	11-Apr-00	11,729		
	14-Apr-00	50,000		
	1-May-00	23,787		
	12-May-00	1,338	17.2	
	16-May-00	1019	16.6	
	19-May-00	1053	18	
	01-Jun-00	467	17.9	
	30-Jun-00	221	17.4	
	31-Jul-00	95	17.2	
	30-Aug-00	154	17.7	
	8-Nov-00	20.6	18.2	
	8-Dec-00	10.6	20.1	
	29-Dec-00	10.1	20.9	
	31-Jan-01	34.2	20.1	
	28-Feb-01	2.4	21	
	13-Mar-01	11	19.0	
	14-Mar-01	23.8	20.0	
	16-Mar-01	21.4	20.1	
	19-Apr-01	4	21	
	25-Apr-01	1.1	21	
	9-May-01	12.2	19.1	
	29-May-01	4	21	
	28-Jun-01	3.8	20.9	
	26-Jul-01	1.4	20.8	
	23-Aug-01	2.7	20.8	
	20-Sep-01	0	21	
	15-Oct-01	1.9	21	
	21-Nov-01	1.9	20.8	
	17-Dec-01	5.2	20.1	
	21-Jan-02	7.8	21	
	27-Feb-02	7.8	21.1	
	14-Mar-02	3.9	21	
	26-Apr-02	2.8	21	
	30-May-02	0.9	21	
	28-Jun-02	0	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC12	13-Mar-00	67.7		
	13-Mar-00	35		
	14-Mar-00	2,441		
	15-Mar-00	2,430		
	16-Mar-00	2,321		
	20-Mar-00	31,993		
	21-Mar-00	31,723		
	22-Mar-00	17,801		
	29-Mar-00	6,880		
	31-Mar-00	17,994		
	4-Apr-00	5,491		
	7-Apr-00	6,709		
	11-Apr-00	6,709		
	14-Apr-00			
	1-May-00	1,067		
	12-May-00	3,413	15.8	
	16-May-00	2943	15.1	
	19-May-00	2467	16.3	
	01-Jun-00	1,457	20.1	
	30-Jun-00	2,176	14.8	
	31-Jul-00	1,620	14.2	
	30-Aug-00	92.4	18.1	
	8-Nov-00	135.6	19.6	
	8-Dec-00	119.4	18.6	
	29-Dec-00	51.2	19.6	
	31-Jan-01	144	19.6	
	28-Feb-01	29.6	20.3	
	13-Mar-01	324.3	13.1	
	14-Mar-01	104	19.4	
	16-Mar-01	101	20.0	
	19-Apr-01	46.2	21	
	25-Apr-01	31.4	20.8	
	9-May-01	127.3	18.2	
	29-May-01	18.4	20.4	
	28-Jun-01	21.4	20.1	
	26-Jul-01	0.8	21	
	23-Aug-01	0.4	21	
	20-Sep-01	0	21	
	15-Oct-01	67.1	21	
	21-Nov-01	67.1	19	
	17-Dec-01	0.8	19.6	
	21-Jan-02	1	19.4	
	27-Feb-02	1	20.6	
	14-Mar-02	0	20.3	
	26-Apr-02	0	21	
	30-May-02	0	20.6	
	28-Jun-02	0	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC13	13-Mar-00	141.6		
	13-Mar-00	67		
	14-Mar-00	16,689		
	15-Mar-00	17,432		
	16-Mar-00	16,420		
	20-Mar-00	11,644		
	21-Mar-00	11,704		
	22-Mar-00	10,659		
	29-Mar-00	4,631		
	31-Mar-00	7,794		
	4-Apr-00	2,382		
	7-Apr-00	3,471		
	11-Apr-00	3,471		
	14-Apr-00	7,879		
	1-May-00	2,437		
	12-May-00	271.7	15	
	16-May-00	134.7	14.7	
	19-May-00	89	15.9	
	01-Jun-00	223	18.9	
	30-Jun-00	8	17.2	
	31-Jul-00	54.9	19.5	
	30-Aug-00	12.2	19.4	
	8-Nov-00	9.7	19.8	
	8-Dec-00	44.4	19.9	
	29-Dec-00	6.8	20.9	
	31-Jan-01	4.1	20.8	
	28-Feb-01	1.3	21	
	13-Mar-01	0	18.8	
	14-Mar-01	30.6	19.7	
	16-Mar-01	24.7	20	
	19-Apr-01	0.9	21	
	25-Apr-01	2.1	21	
	9-May-01	16.1	17.9	
	29-May-01	6.1	21	
	28-Jun-01	4	21	
	26-Jul-01	7.2	21	
	23-Aug-01	6.1	21	
	20-Sep-01	0	21	
	15-Oct-01	0	21	
	21-Nov-01	0	20.9	
	17-Dec-01	1.3	21	
	21-Jan-02	1	21	
	27-Feb-02	1	20.1	
	14-Mar-02	2.2	21	
	26-Apr-02	0	21	
	30-May-02	0	20.6	
	28-Jun-02	0	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC14	13-Mar-00	44.7		
	13-Mar-00	41		
	14-Mar-00	12,049		
	15-Mar-00	13,051		
	16-Mar-00	12,220		
	20-Mar-00	4,338		
	21-Mar-00	4,364		
	22-Mar-00	2,610		
	29-Mar-00	1,335		
	31-Mar-00	2,250		
	4-Apr-00	1,521		
	7-Apr-00	1,245		
	11-Apr-00	1,245		
	14-Apr-00	2,477		
	1-May-00	1,083		
	12-May-00	720.6	18.7	
	16-May-00	407.5	17.8	
	19-May-00	394.6	19.1	
	01-Jun-00	151	20.4	
	30-Jun-00	197	18.6	
	31-Jul-00	126	19.6	
	30-Aug-00	43.7	18.7	
	8-Nov-00	14.5	20.2	
	8-Dec-00	7.2	20.4	
	29-Dec-00	6.9	20.8	
	31-Jan-01	5.4	20.8	
	28-Feb-01	1.6	21	
	13-Mar-01	30.1	18.5	
	14-Mar-01	10.4	20.4	
	16-Mar-01	9.0	20.4	
	19-Apr-01	2.1	21	
	25-Apr-01	1.7	21	
	9-May-01	11.2	18.9	
	29-May-01	2.6	21	
	28-Jun-01	1.1	21	
	26-Jul-01	0.4	20.6	
	23-Aug-01	0	21	
	20-Sep-01	0	21	
	15-Oct-01	1.4	21	
	21-Nov-01	0.6	20.1	
	17-Dec-01	0	21	
	21-Jan-02	0.6	20.8	
	27-Feb-02	0.6	20.6	
	14-Mar-02	0	20.4	
	26-Apr-02	0	20.7	
	30-May-02	0	20.6	
	28-Jun-02	0	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC15	13-Mar-00			
	13-Mar-00			
	14-Mar-00	3,419		
	15-Mar-00	3,502		
	16-Mar-00	3,631		
	20-Mar-00	3,402		
	21-Mar-00	2,059		
	22-Mar-00	580		
	29-Mar-00	1,549		
	31-Mar-00	1,009		
	4-Apr-00	987		
	7-Apr-00	987		
	11-Apr-00			
	14-Apr-00	678		
	1-May-00	605.9		
	12-May-00	1,187	17.6	
	16-May-00	524	17.5	
	19-May-00	89	18.3	
	01-Jun-00	137	20.3	
	30-Jun-00	147	17.2	
	31-Jul-00	169	18.9	
	30-Aug-00	14	20.1	
	8-Nov-00	12	20.1	
	8-Dec-00	11.7	20.3	
	29-Dec-00	0	20.9	
	31-Jan-01	1.9	20.8	
	28-Feb-01	0	20.0	
	13-Mar-01	22	18.7	
	14-Mar-01	17.8	20	
	16-Mar-01	13.7	20.1	
	19-Apr-01	0	21	
	25-Apr-01	0	21	
	9-May-01			
	29-May-01	0	20	
	28-Jun-01	0	21	
	26-Jul-01	0	21	
	23-Aug-01	0	21	
	20-Sep-01	0	21	
	15-Oct-01	0	21	
	21-Nov-01	0	20.9	
	17-Dec-01	0	21	
	21-Jan-02	0	21	
	27-Feb-02	0	21	
	14-Mar-02	0	21	
	26-Apr-02	0	21	
	30-May-02	0	21	
	28-Jun-02	0	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC16	6/20/2002	22.6	21	
	6/20/2002	19.4	21	
	6/21/2002	21.1	21	
	6/21/2002	0	21	
	6/24/2002	15.4	21	
	6/26/2002	16.4	21	
	6/28/2002	15.1	21	

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC17	6/20/2002	18.6	21	
	6/20/2002	20.6	21	
	6/21/2002	29.3	21	
	6/21/2002	32.6	21	
	6/24/2002	23.8	21	
	6/26/2002	19.6	21	
	6/28/2002	21.2	21	

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC18	6/20/2002	19.7	21	
	6/20/2002	19.9	21	
	6/21/2002	19.2	21	
	6/21/2002	14.4	21	
	6/24/2002	17.9	20.7	
	6/26/2002	18.2	21	
	6/28/2002	17.7	21	

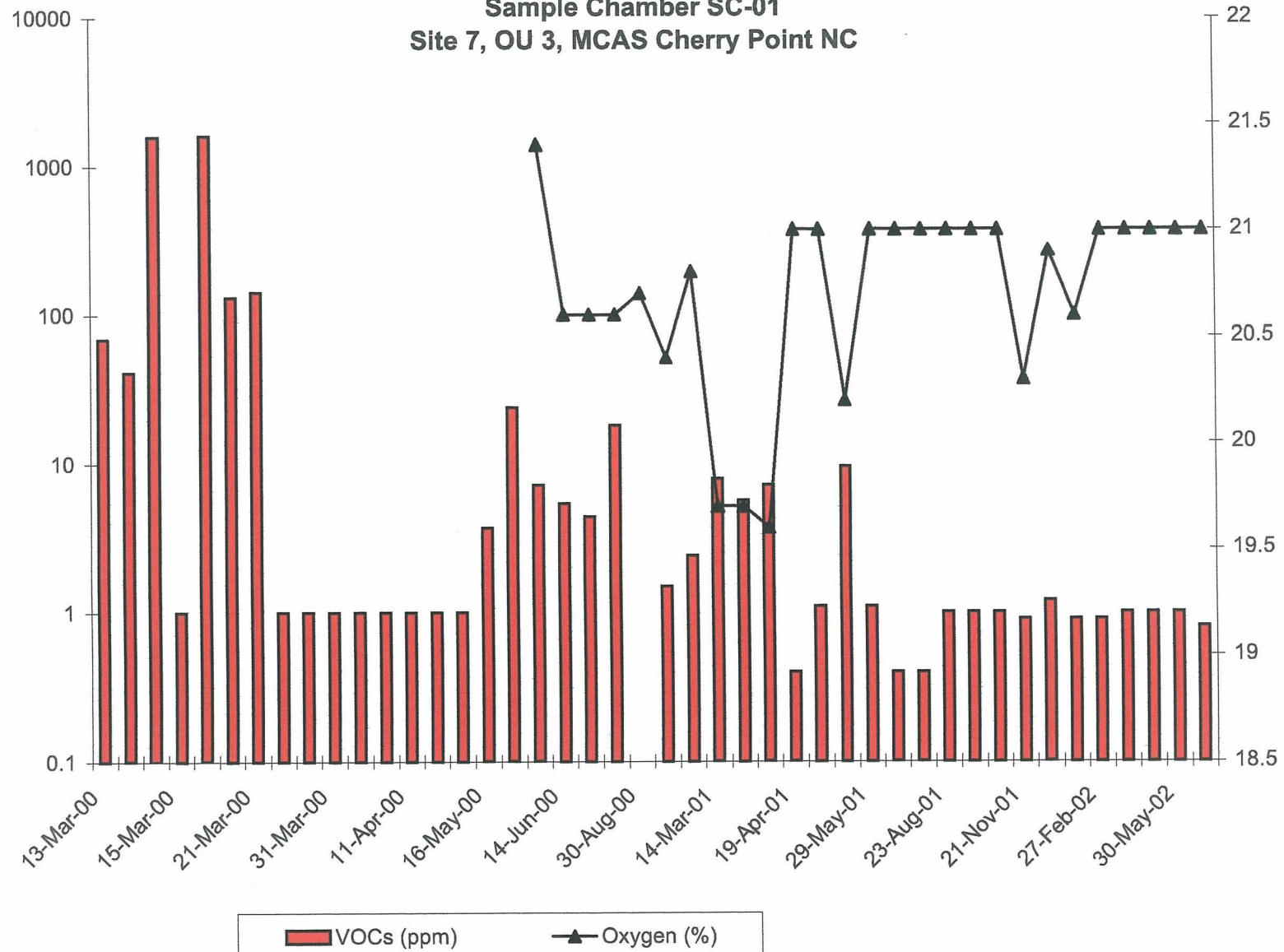
Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC19	6/20/2002	199.4	21	
	6/20/2002	167.8	21	
	6/21/2002	116.7	20.9	
	6/21/2002	147.6	21	
	6/24/2002	111.1	21	
	6/26/2002	161.2	21	
	6/28/2002	102.4	21	

Appendix A
Summary of Sample Chamber Measurements
Site 7 OU 3, MCAS Cherry Point, NC

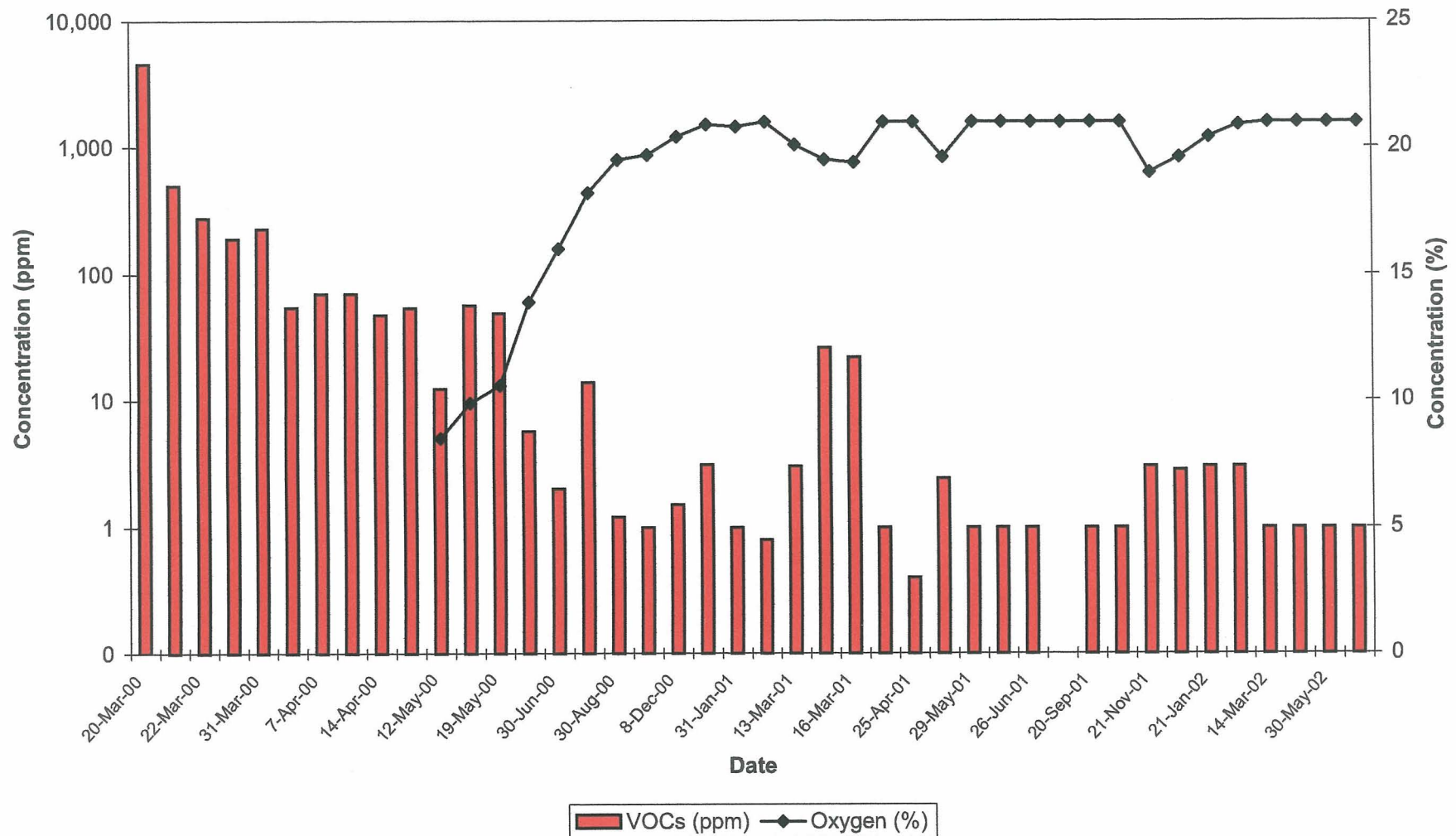
Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC20	6/20/2002	46.2	16.4	
	6/20/2002	40.2	16.4	
	6/21/2002	44.9	16.4	
	6/21/2002	42.1	16.2	
	6/24/2002	22.8	16.1	
	6/26/2002	41.6	16.5	
	6/28/2002	37.6	16.2	

Sample Chamber	Date	VOCs (ppm)	Oxygen (%)	Comments
SC21	6/20/2002	58.1	15.1	
	6/20/2002	61	15.5	
	6/21/2002	62.8	15.8	
	6/21/2002	61.1	15.8	
	6/24/2002	19.1	18.4	
	6/26/2002	20.1	16.9	
	6/28/2002	19.3	17.1	

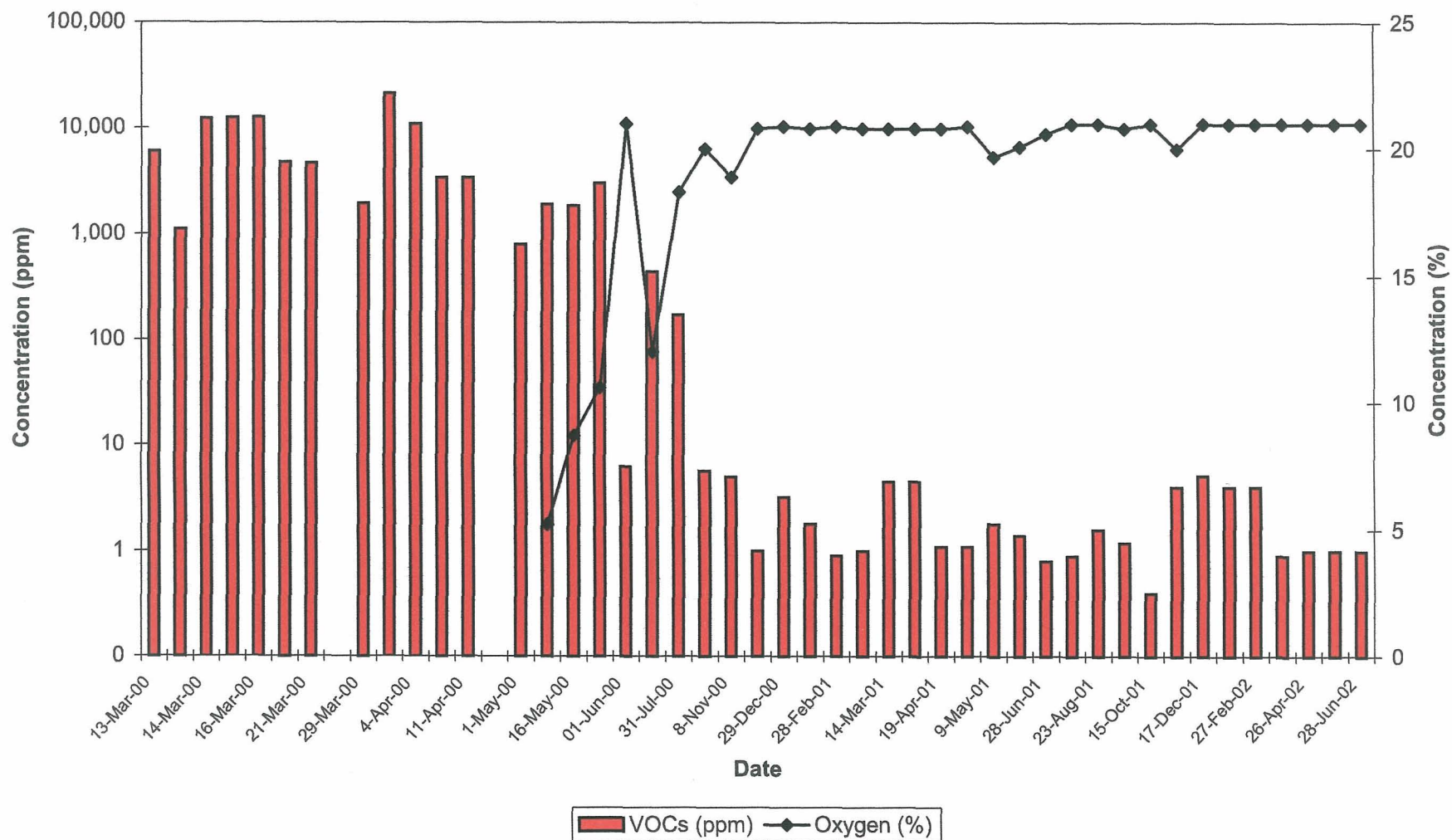
**Vadose Zone Conditions
Sample Chamber SC-01
Site 7, OU 3, MCAS Cherry Point NC**



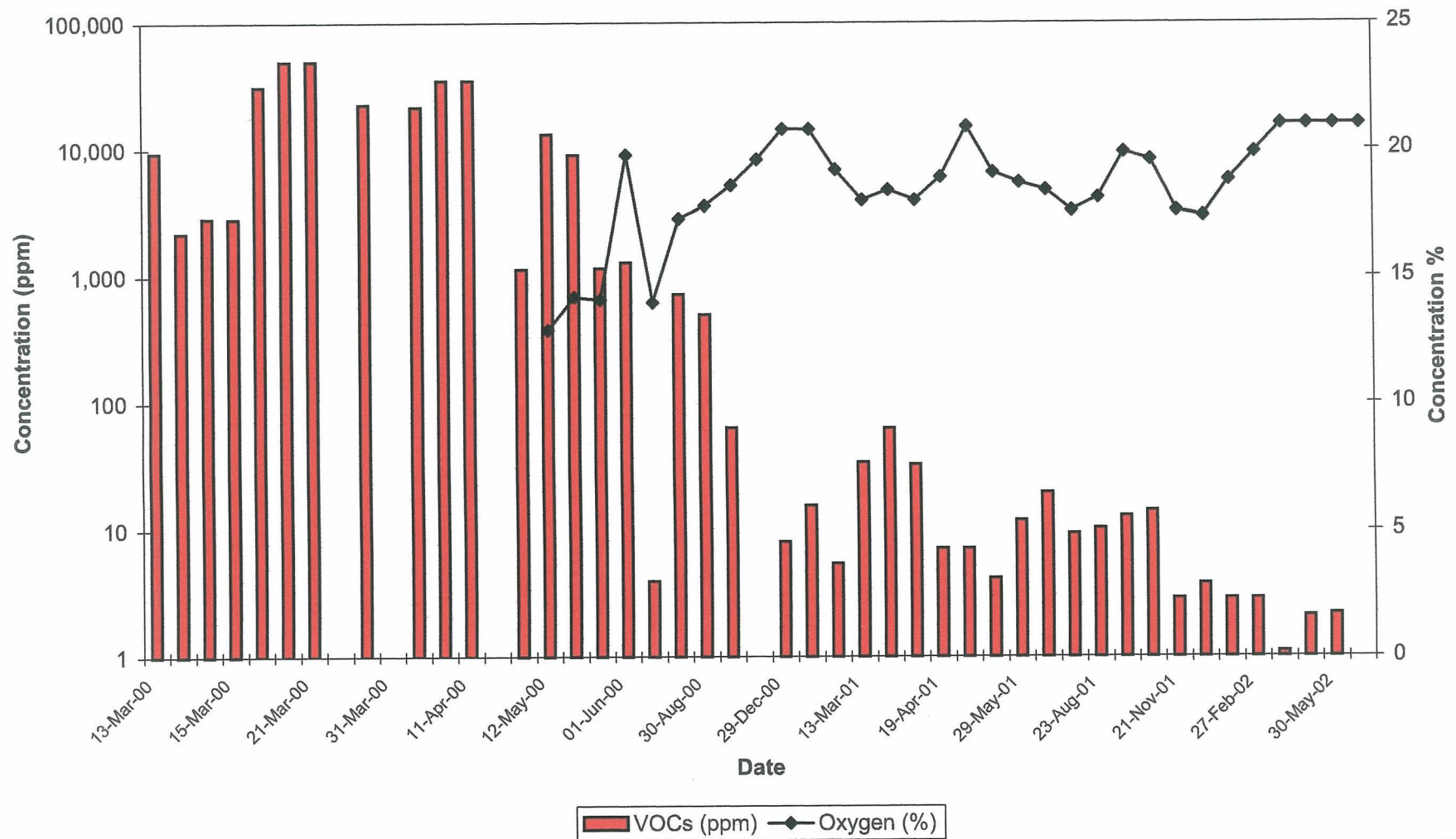
Vadose Zone Conditions
Sample Chamber SC-02
Site 7, OU3, MCAS Cherry Point, NC



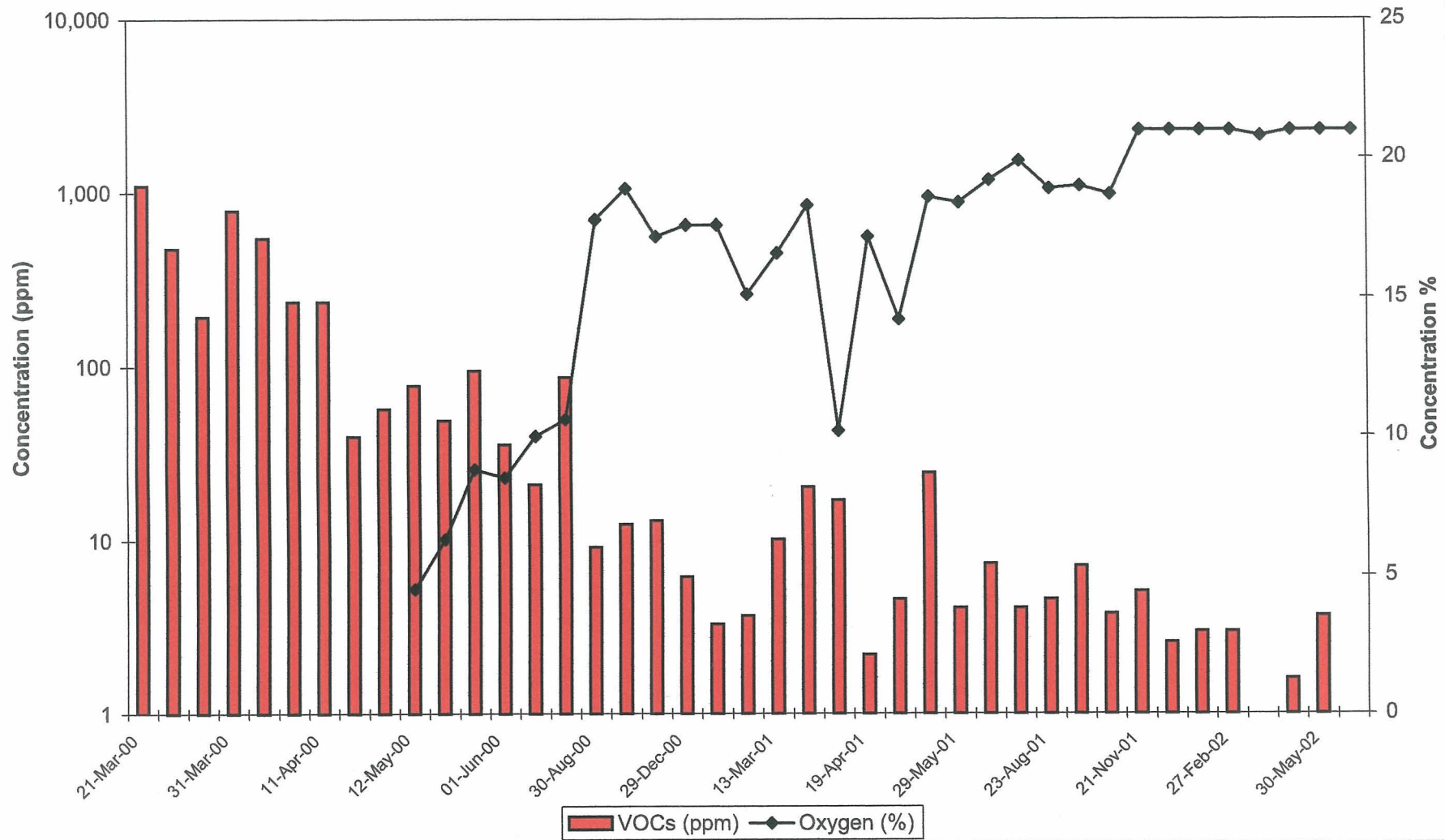
**Vadose Zone Conditions
Sample Chamber SC-03
Site 7, OU3, MCAS Cherry Point, NC**



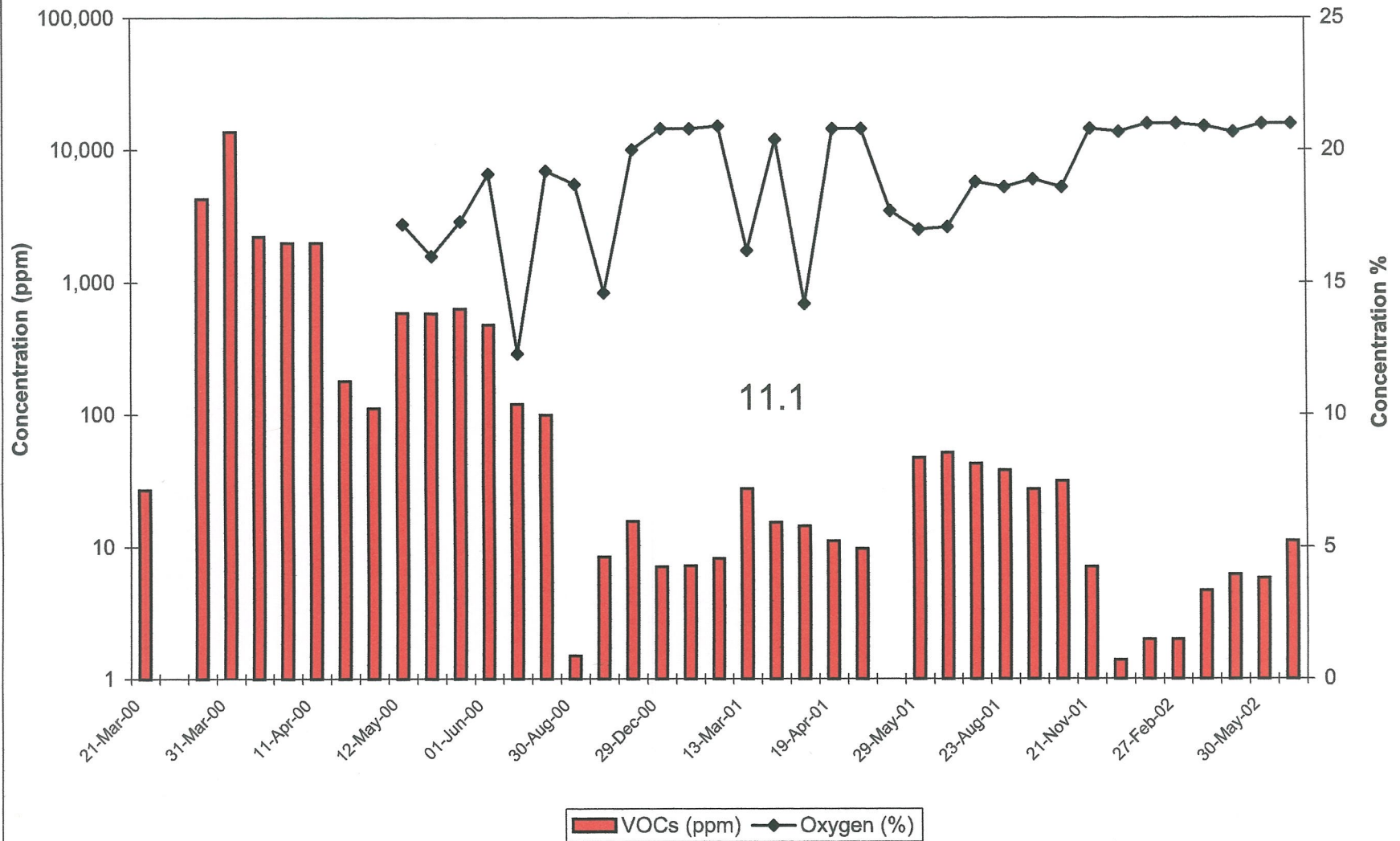
**Vadose Zone Conditions
Sample Chamber SC-04
Site 7, OU3, MCAS Cherry Point, NC**



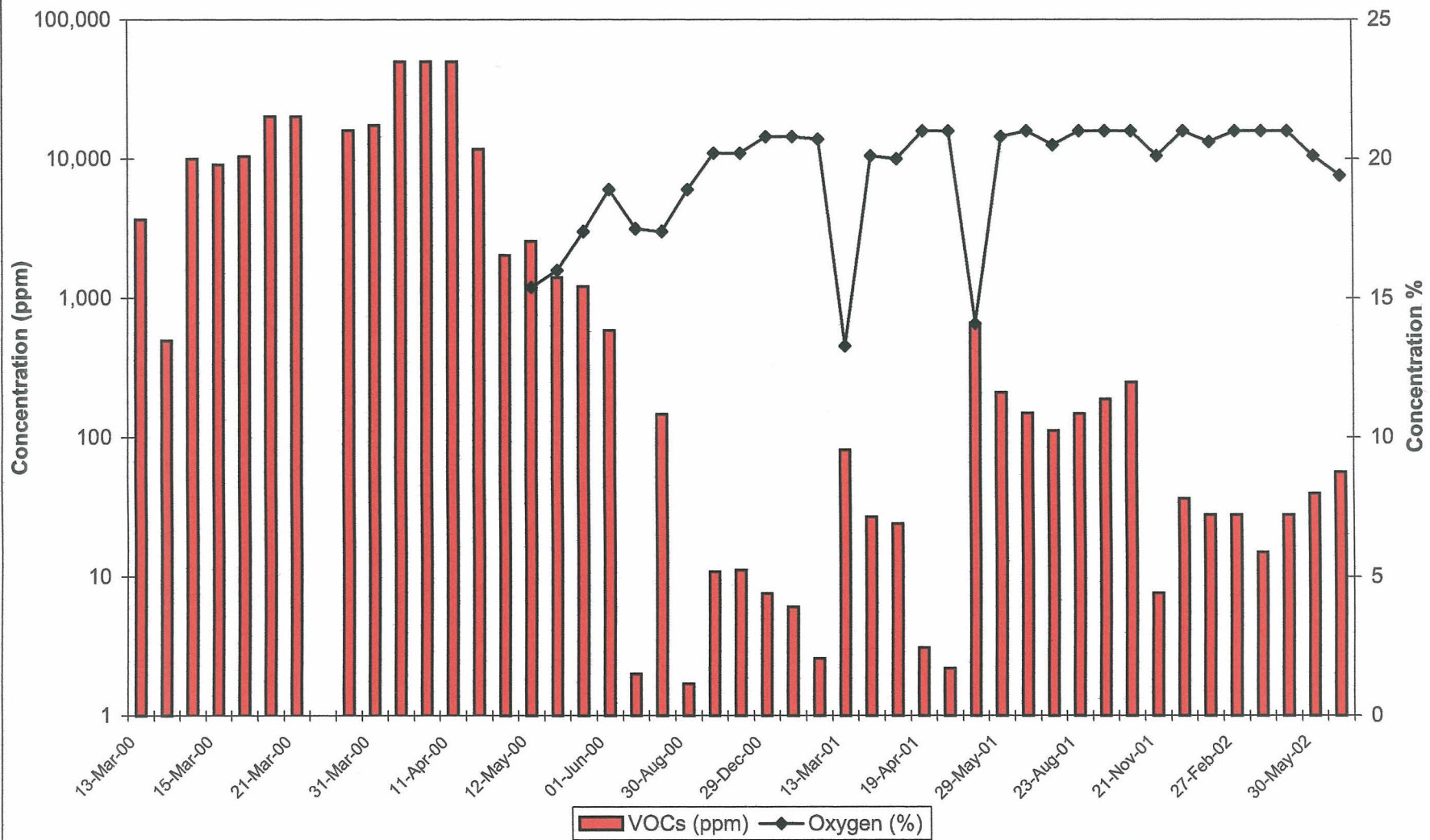
Vadose Zone Conditions
Sample Chamber SC-05
Site 7, OU3, MCAS Cherry Point, NC



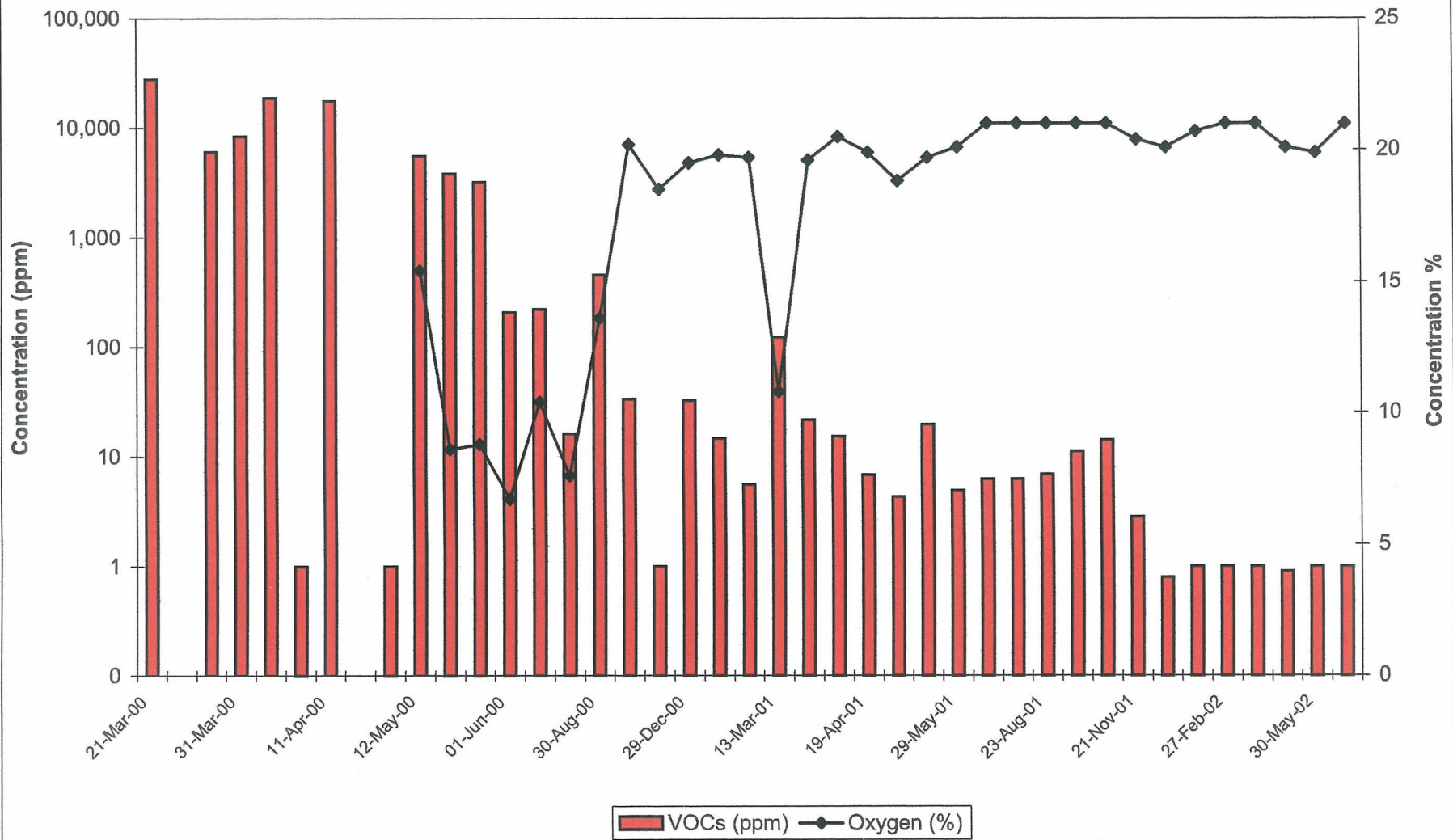
Vadose Zone Conditions
Sample Chamber SC-06
Site 7, OU3, MCAS Cherry Point, NC



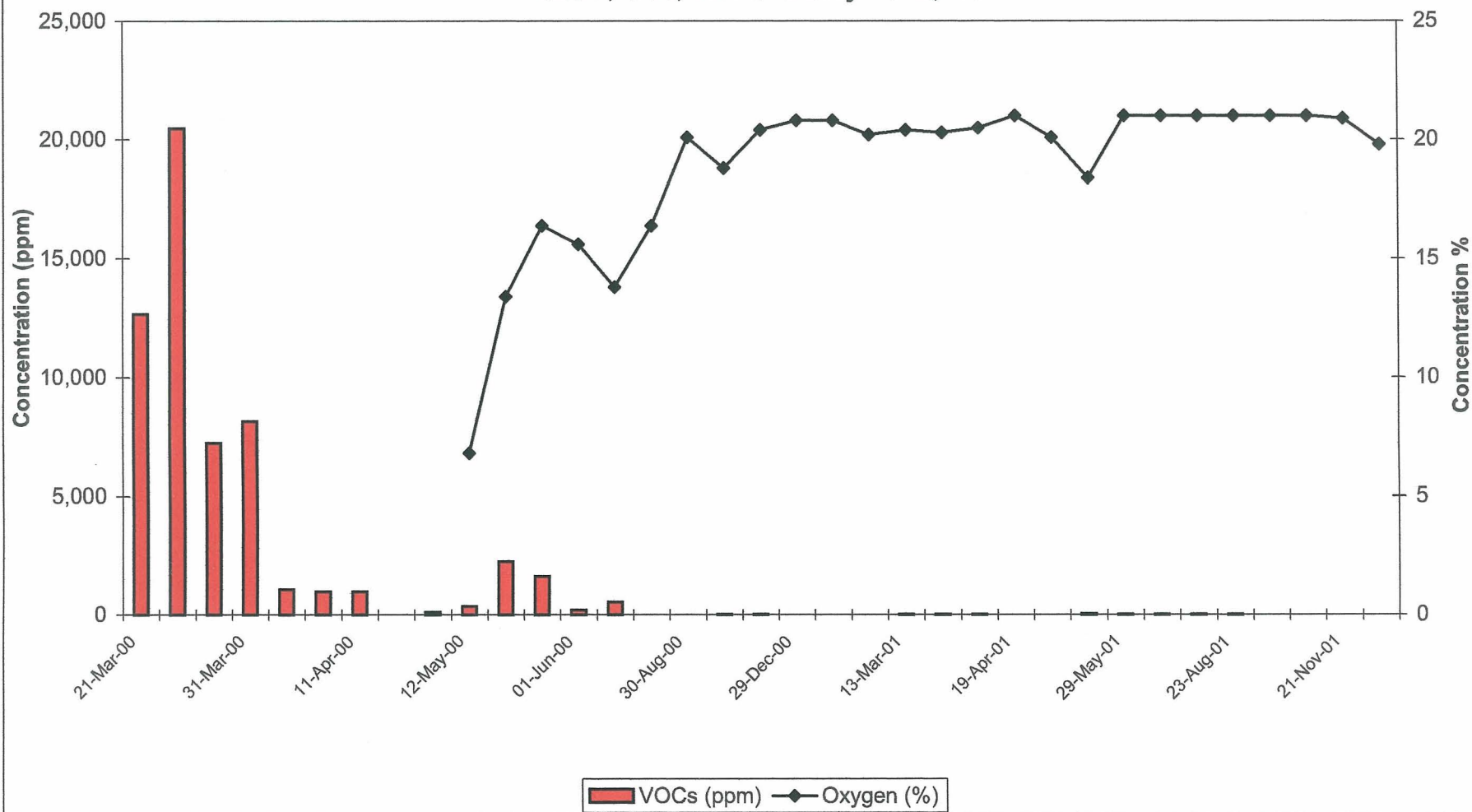
**Vadose Zone Conditions
Sample Chamber SC-07
Site 7, OU3, MCAS Cherry Point, NC**



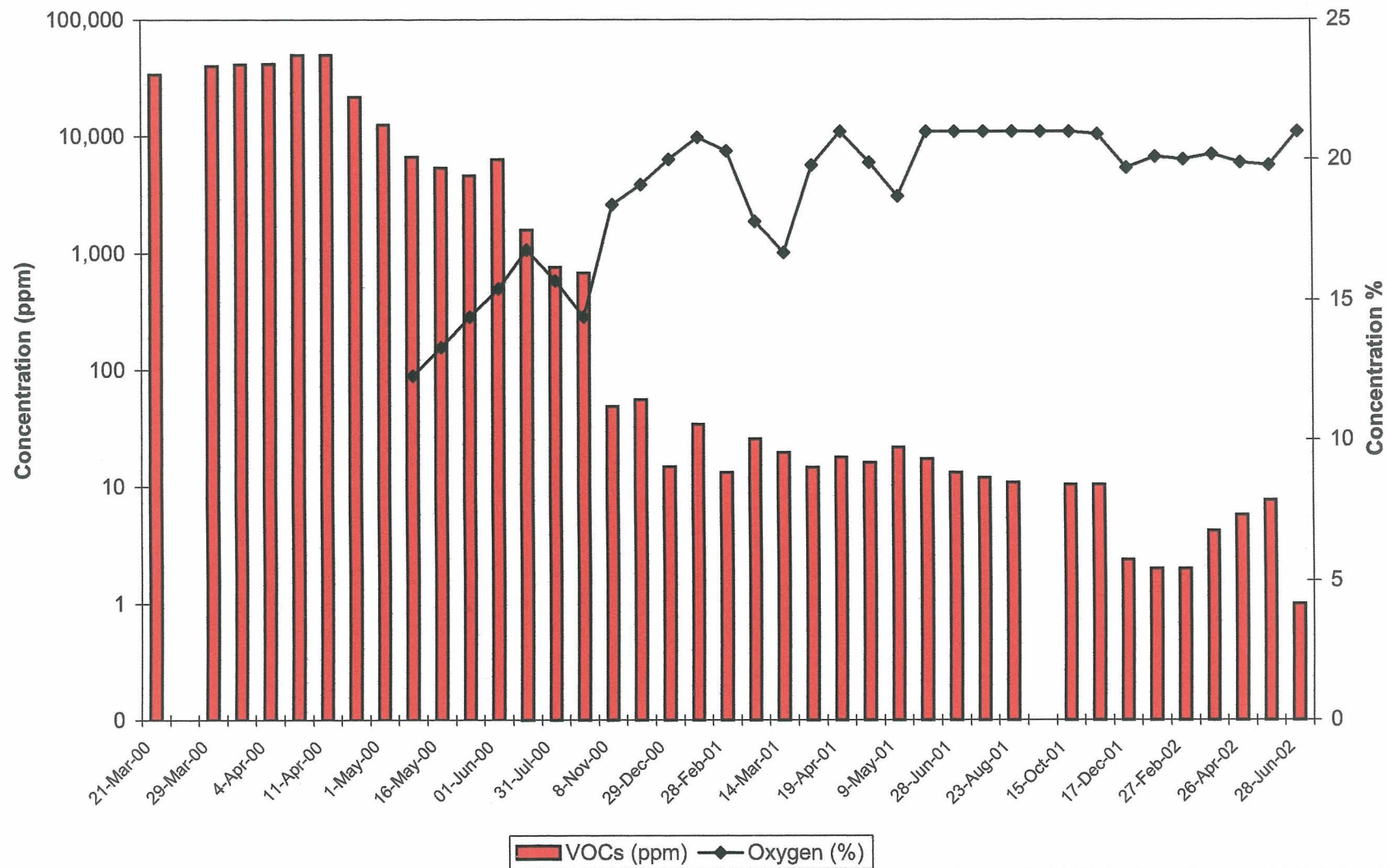
**Vadose Zone Conditions
Sample Chamber SC-08
Site 7, OU3, MCAS Cherry Point, NC**



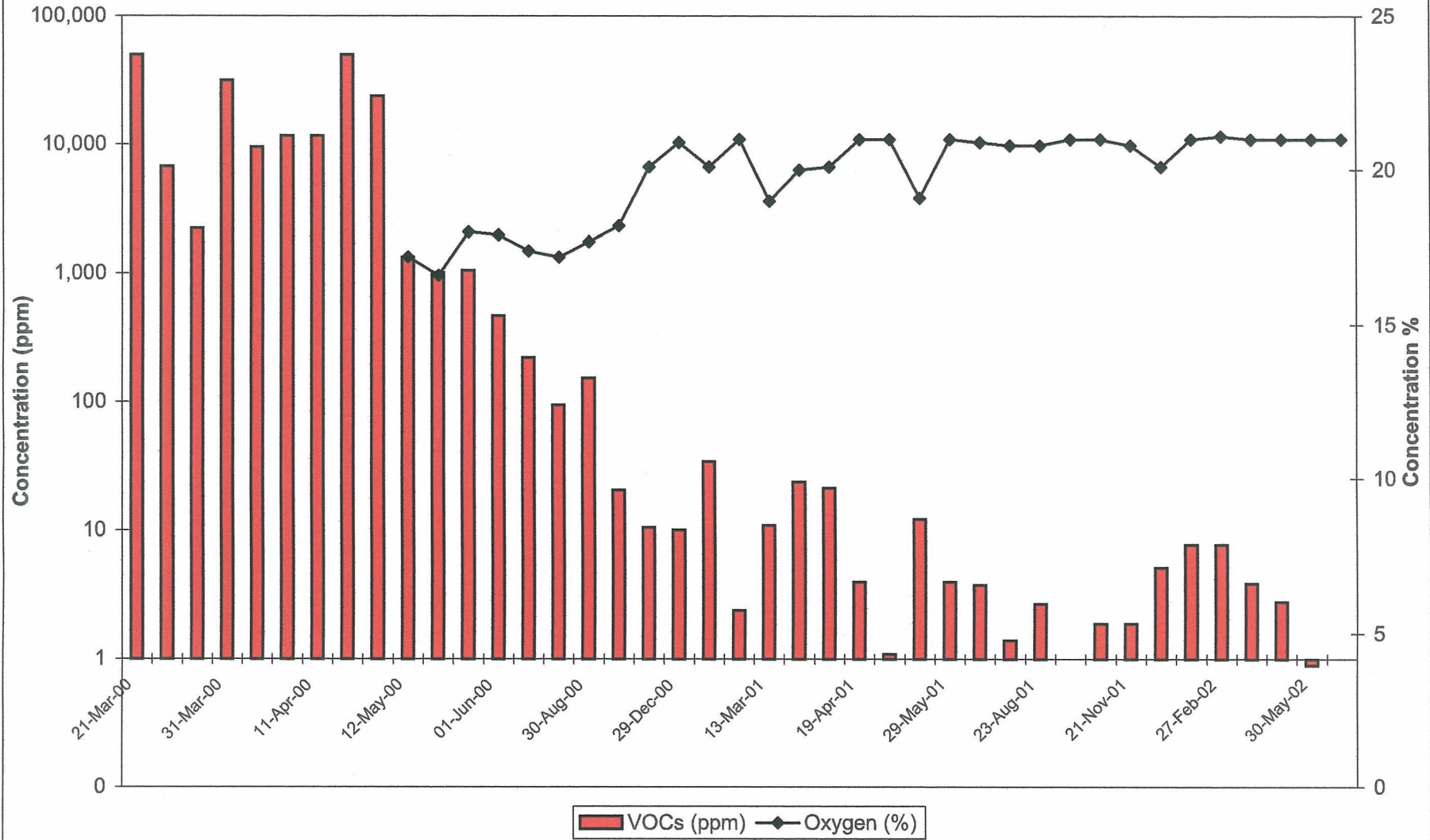
**Vadose Zone Conditions
Sample Chamber SC-09
Site 7, OU3, MCAS Cherry Point, NC**



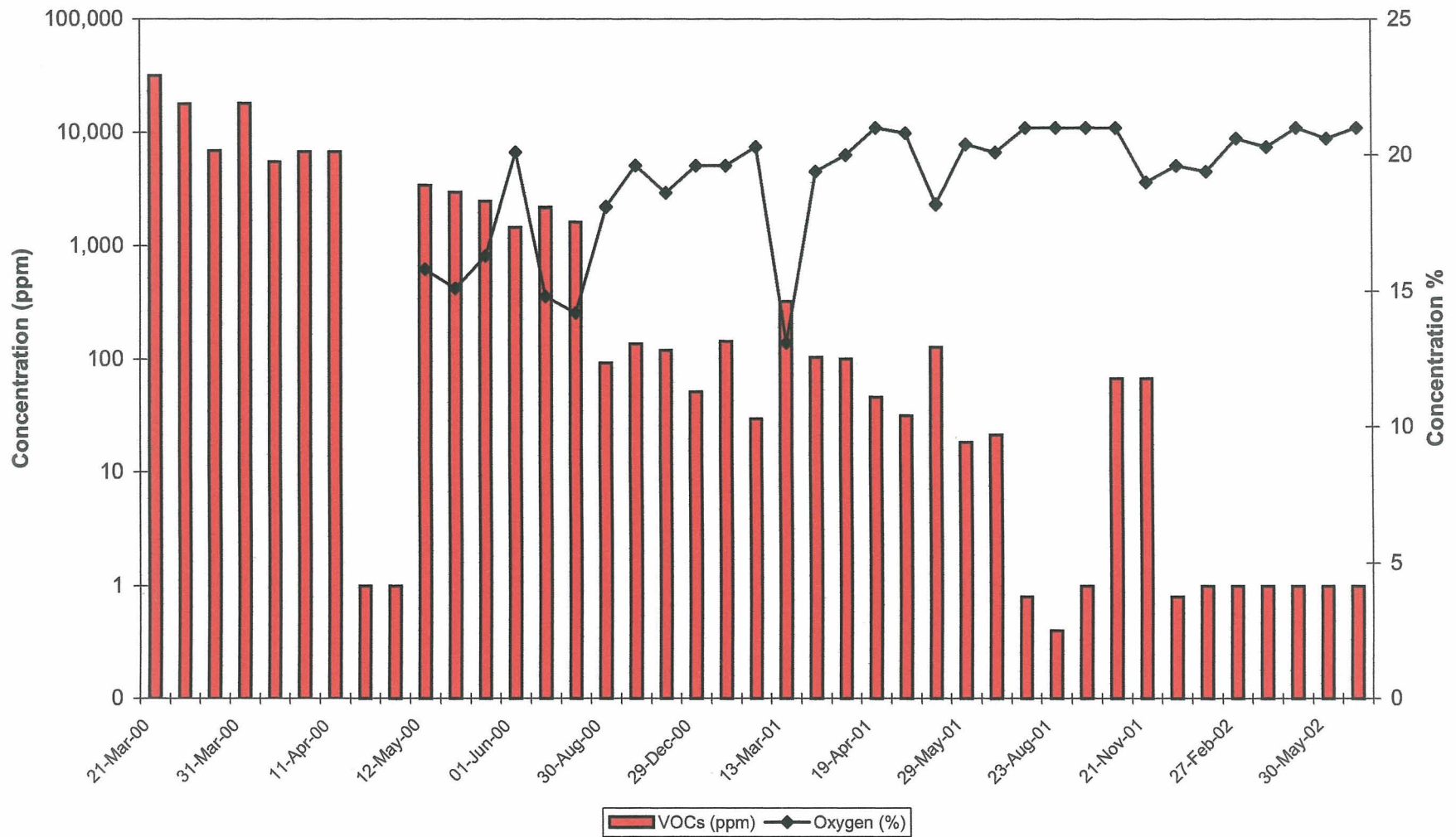
Vadose Zone Conditions
Sample Chamber SC-10
Site 7, OU3, MCAS Cherry Point, NC



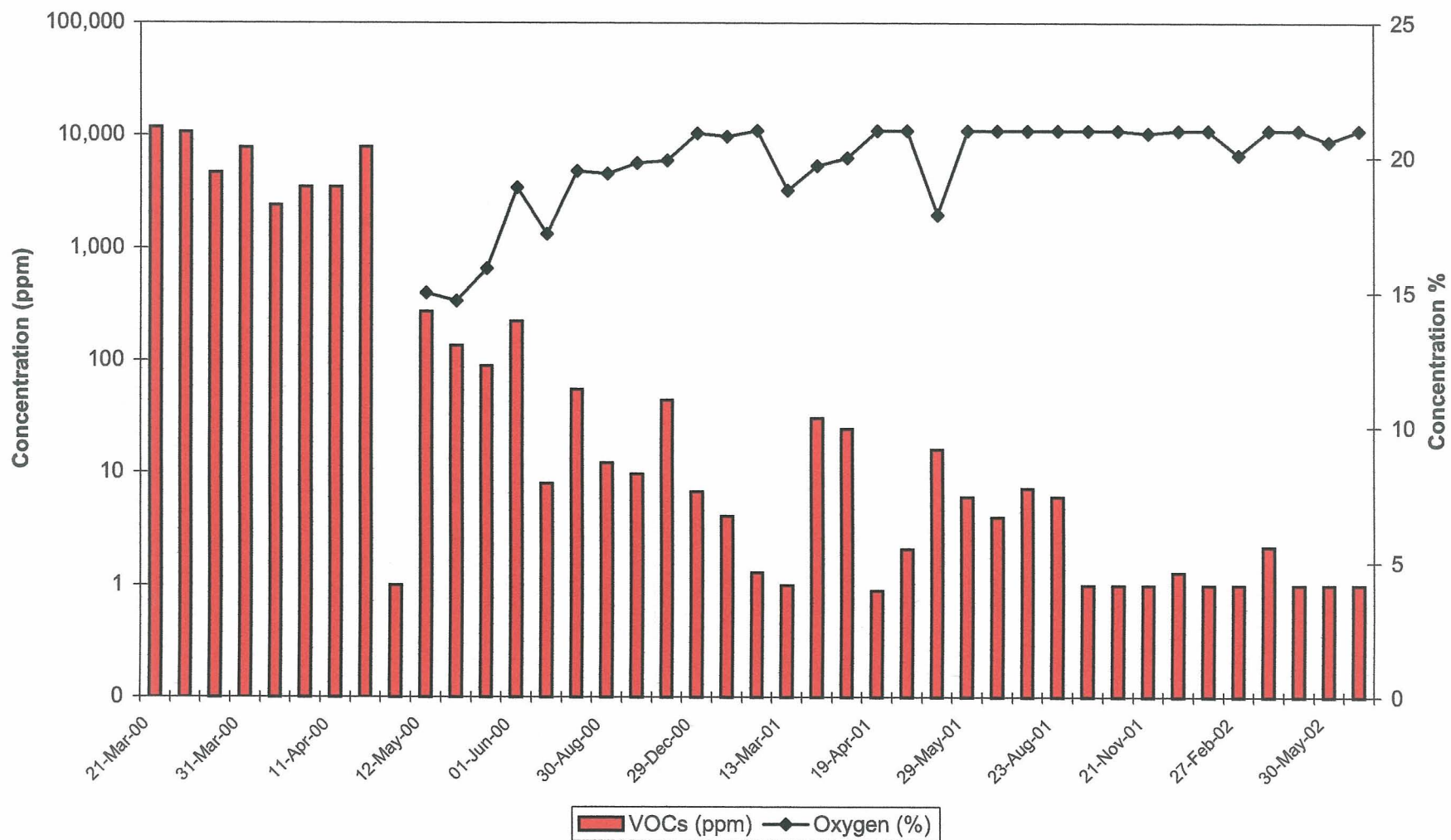
Vadose Zone Conditions
Sample Chamber SC-11
Site 7, OU3, MCAS Cherry Point, NC



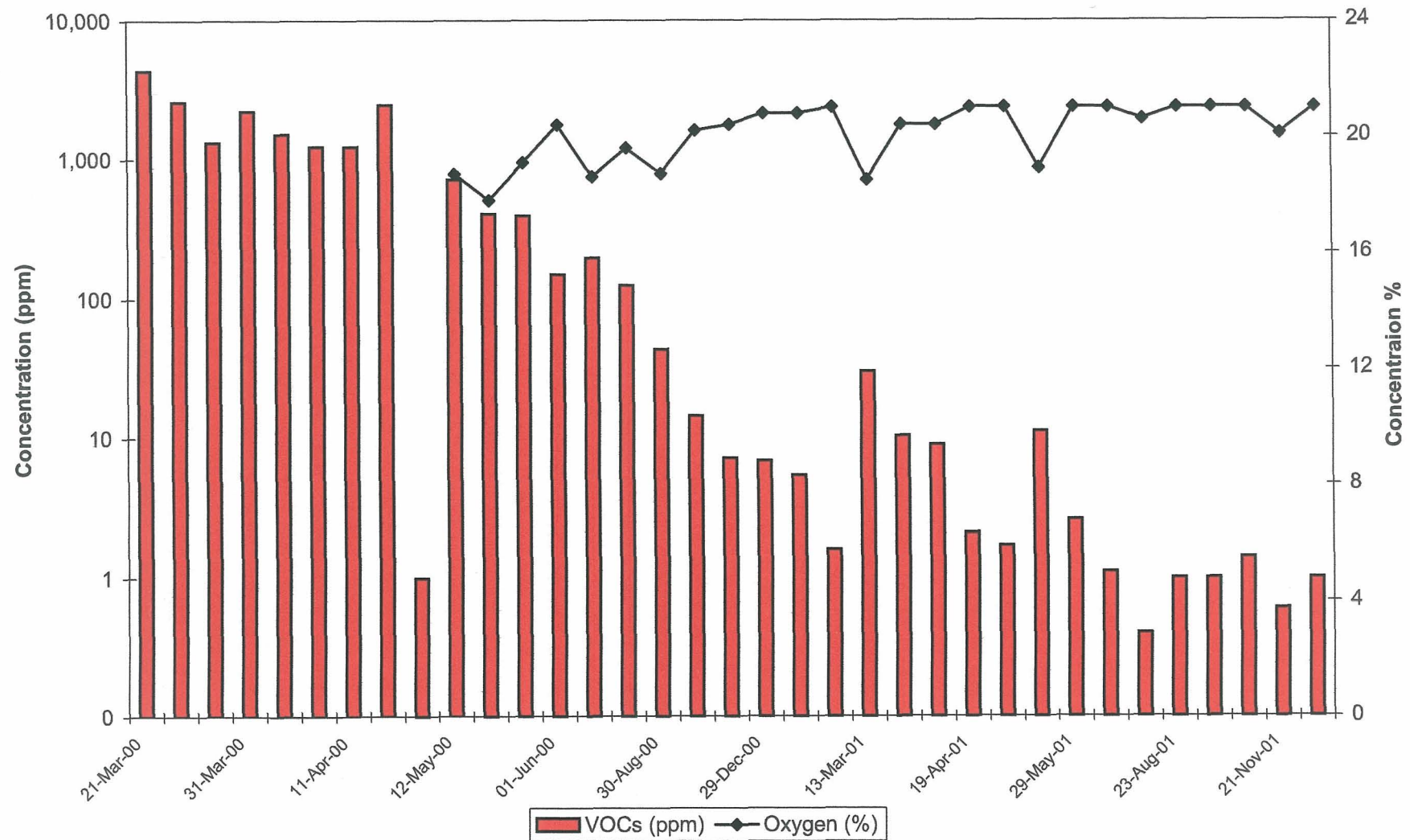
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Sample Chamber SC-12
Site 7, OU3, MCAS Cherry Point, NC



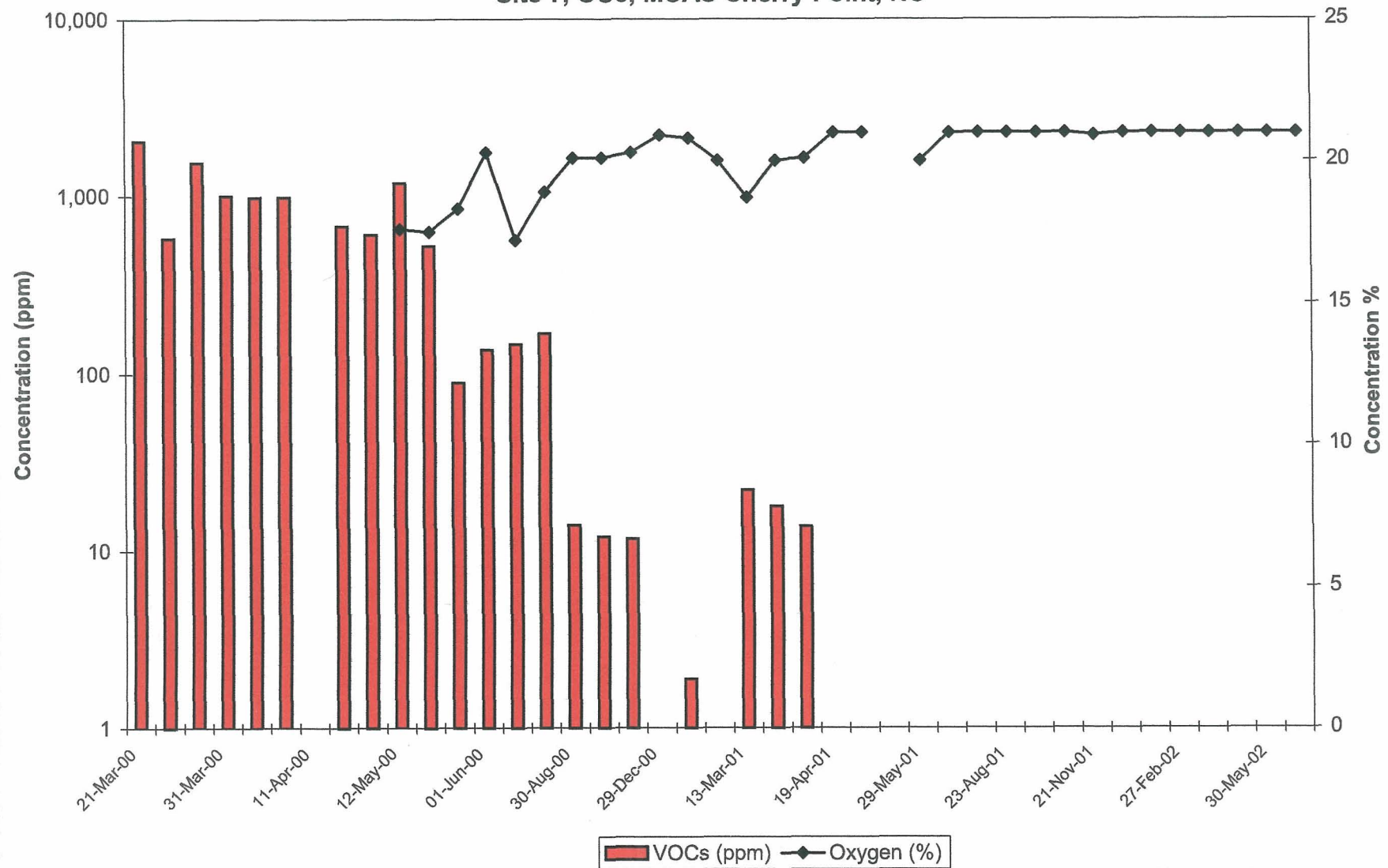
Vadose Zone Conditions
Sample Chamber SC-13
Site 7, OU3, MCAS Cherry Point, NC



**Vadose Zone Conditions
Sample Chamber SC-14
Site 7, OU3, MCAS Cherry Point, NC**



Vadose Zone Conditions
Sample Chamber SC-15
Site 7, OU3, MCAS Cherry Point, NC



Appendix B

Groundwater Sample Analytical Report

Technical Report for

Shaw E & I, Inc.

Site 7-Cherry Point

777756-99004007 Site 7

Accutest Job Number: F13633

Report to:

Shaw E & I, Inc.

Natasha.Sullivan@theitgroup.com

ATTN: Natasha Sullivan

Total number of pages in report: 27



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.


Harry Behzadi, Ph.D.
Laboratory Director

Certification: Florida DOH E83510

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Accutest Laboratories

Sample Summary

Shaw E & I, Inc.

Job No: F13633

Site 7-Cherry Point

Project No: 777756-99004007 Site 7

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
F13633-1	06/20/02	13:00	06/21/02	AQ Ground Water	7GW09-04
F13633-2	06/20/02	00:00	06/21/02	AQ Ground Water	DUP-04
F13633-3	06/20/02	13:30	06/21/02	AQ Ground Water	FIELD BLANK-04

Report of Analysis

Client Sample ID:	7GW09-04	Date Sampled:	06/20/02
Lab Sample ID:	F13633-1	Date Received:	06/21/02
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Site 7-Cherry Point		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0010381.D	1	06/28/02	JG	n/a	n/a	VB457
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	2.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	7GW09-04	Date Sampled:	06/20/02
Lab Sample ID:	F13633-1	Date Received:	06/21/02
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Site 7-Cherry Point		

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		80-120%
2037-26-5	Toluene-D8	85%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-04	Date Sampled:	06/20/02
Lab Sample ID:	F13633-2	Date Received:	06/21/02
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Site 7-Cherry Point		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0010382.D	1	06/28/02	JG	n/a	n/a	VB457
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	2.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-04	Date Sampled:	06/20/02
Lab Sample ID:	F13633-2	Date Received:	06/21/02
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Site 7-Cherry Point		

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		80-120%
2037-26-5	Toluene-D8	86%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD BLANK-04	Date Sampled:	06/20/02
Lab Sample ID:	F13633-3	Date Received:	06/21/02
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Site 7-Cherry Point		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	B0010380.D	1	06/28/02	JG	n/a	n/a	VB457
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	2.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	1.6	2.0	ug/l	J
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD BLANK-04	Date Sampled:	06/20/02
Lab Sample ID:	F13633-3	Date Received:	06/21/02
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Site 7-Cherry Point		

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		80-120%
2037-26-5	Toluene-D8	86%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

(a) Confirmed by reanalysis.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Blank Spike Summary

Page 1 of 2

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB457-BS	B0010378.D	1	06/28/02	JG	n/a	n/a	VB457

The QC reported here applies to the following samples:

Method: SW846 8260B

F13633-1, F13633-2, F13633-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	137	110	67-125
71-43-2	Benzene	25	28.5	114	75-125
75-27-4	Bromodichloromethane	25	27.5	110	75-125
75-25-2	Bromoform	25	22.2	89	72-125
108-90-7	Chlorobenzene	25	23.4	94	75-125
75-00-3	Chloroethane	25	30.5	122	58-136
67-66-3	Chloroform	25	27.8	111	75-125
75-15-0	Carbon disulfide	125	126	101	48-142
56-23-5	Carbon tetrachloride	25	34.2	137*	75-136
75-34-3	1,1-Dichloroethane	25	29.5	118	75-125
75-35-4	1,1-Dichloroethylene	25	27.9	112	67-138
107-06-2	1,2-Dichloroethane	25	27.5	110	75-125
78-87-5	1,2-Dichloropropane	25	30.1	120	75-125
124-48-1	Dibromochloromethane	25	24.9	100	75-125
156-59-2	cis-1,2-Dichloroethylene	25	30.3	121	75-129
10061-01-5	cis-1,3-Dichloropropene	25	25.4	102	75-125
156-60-5	trans-1,2-Dichloroethylene	25	27.8	111	73-125
10061-02-6	trans-1,3-Dichloropropene	25	19.5	78	75-125
100-41-4	Ethylbenzene	25	23.3	93	68-135
591-78-6	2-Hexanone	125	121	97	68-125
108-10-1	4-Methyl-2-pentanone	125	148	118	75-125
74-83-9	Methyl bromide	25	33.0	132	59-146
74-87-3	Methyl chloride	25	31.8	127	50-142
75-09-2	Methylene chloride	25	29.0	116	69-125
78-93-3	Methyl ethyl ketone	125	143	114	70-125
100-42-5	Styrene	25	24.0	96	75-125
71-55-6	1,1,1-Trichloroethane	25	31.7	127	75-132
79-34-5	1,1,2,2-Tetrachloroethane	25	21.7	87	75-125
79-00-5	1,1,2-Trichloroethane	25	22.5	90	75-125
127-18-4	Tetrachloroethylene	25	23.2	93	75-126
108-88-3	Toluene	25	23.8	95	75-125
79-01-6	Trichloroethylene	25	29.2	117	75-125
75-01-4	Vinyl chloride	25	27.6	110	60-147
1330-20-7	Xylene (total)	75	71.9	96	75-125

Blank Spike Summary

Page 2 of 2

Job Number: F13633

Account: ITVAVAB Shaw E & I, Inc.

Project: Site 7-Cherry Point

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB457-BS	B0010378.D	1	06/28/02	JG	n/a	n/a	VB457

The QC reported here applies to the following samples:

Method: SW846 8260B

F13633-1, F13633-2, F13633-3

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	80-120%
17060-07-0	1,2-Dichloroethane-D4	99%	80-120%
2037-26-5	Toluene-D8	87%	80-120%
460-00-4	4-Bromofluorobenzene	90%	80-120%

Duplicate Summary

Page 1 of 2

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F13633-2DUP	B0010383.D	1	06/28/02	JG	n/a	n/a	VB457
F13633-2	B0010382.D	1	06/28/02	JG	n/a	n/a	VB457

The QC reported here applies to the following samples:

Method: SW846 8260B

F13633-1, F13633-2, F13633-3

CAS No.	Compound	F13633-2 ug/l	DUP Q	ug/l	Q	RPD	Limits
67-64-1	Acetone	ND		ND		nc	15
71-43-2	Benzene	ND		ND		nc	15
75-27-4	Bromodichloromethane	ND		ND		nc	15
75-25-2	Bromoform	ND		ND		nc	15
108-90-7	Chlorobenzene	ND		ND		nc	15
75-00-3	Chloroethane	ND		ND		nc	15
67-66-3	Chloroform	ND		ND		nc	15
75-15-0	Carbon disulfide	ND		ND		nc	15
56-23-5	Carbon tetrachloride	ND		ND		nc	15
75-34-3	1,1-Dichloroethane	ND		ND		nc	15
75-35-4	1,1-Dichloroethylene	ND		ND		nc	15
107-06-2	1,2-Dichloroethane	ND		ND		nc	15
78-87-5	1,2-Dichloropropane	ND		ND		nc	15
124-48-1	Dibromochloromethane	ND		ND		nc	15
156-59-2	cis-1,2-Dichloroethylene	ND		ND		nc	15
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	15
156-60-5	trans-1,2-Dichloroethylene	ND		ND		nc	15
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	15
100-41-4	Ethylbenzene	ND		ND		nc	15
591-78-6	2-Hexanone	ND		ND		nc	15
108-10-1	4-Methyl-2-pentanone	ND		ND		nc	15
74-83-9	Methyl bromide	ND		ND		nc	15
74-87-3	Methyl chloride	ND		ND		nc	15
75-09-2	Methylene chloride	ND		ND		nc	15
78-93-3	Methyl ethyl ketone	ND		ND		nc	15
100-42-5	Styrene	ND		ND		nc	15
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	15
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	15
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	15
127-18-4	Tetrachloroethylene	ND		ND		nc	15
108-88-3	Toluene	ND		ND		nc	15
79-01-6	Trichloroethylene	ND		ND		nc	15
75-01-4	Vinyl chloride	ND		ND		nc	15
1330-20-7	Xylene (total)	ND		ND		nc	15

Duplicate Summary

Page 2 of 2

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F13633-2DUP	B0010383.D	1	06/28/02	JG	n/a	n/a	VB457
F13633-2	B0010382.D	1	06/28/02	JG	n/a	n/a	VB457

The QC reported here applies to the following samples:

Method: SW846 8260B

F13633-1, F13633-2, F13633-3

CAS No.	Surrogate Recoveries	DUP	F13633-2	Limits
1868-53-7	Dibromofluoromethane	102%	104%	80-120%
17060-07-0	1,2-Dichloroethane-D4	98%	102%	80-120%
2037-26-5	Toluene-D8	85%	86%	80-120%
460-00-4	4-Bromofluorobenzene	95%	95%	80-120%

Method Blank Summary

Page 1 of 2

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB457-MB	B0010379.D	1	06/28/02	JG	n/a	n/a	VB457

The QC reported here applies to the following samples:

Method: SW846 8260B

F13633-1, F13633-2, F13633-3

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	2.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

Method Blank Summary

Page 2 of 2

Job Number: F13633

Account: ITVAVAB Shaw E & I, Inc.

Project: Site 7-Cherry Point

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VB457-MB	B0010379.D	1	06/28/02	JG	n/a	n/a	VB457

The QC reported here applies to the following samples:

Method: SW846 8260B

F13633-1, F13633-2, F13633-3

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	104%	80-120%
17060-07-0	1,2-Dichloroethane-D4	98%	80-120%
2037-26-5	Toluene-D8	87%	80-120%
460-00-4	4-Bromofluorobenzene	95%	80-120%

Matrix Spike Summary

Page 1 of 2

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F13674-1MS	B0010392.D	1	06/28/02	JG	n/a	n/a	VB457
F13674-1	B0010389.D	1	06/28/02	JG	n/a	n/a	VB457

The QC reported here applies to the following samples:

Method: SW846 8260B

F13633-1, F13633-2, F13633-3

CAS No.	Compound	F13674-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
67-64-1	Acetone	ND		125	136	109	61-125
71-43-2	Benzene	ND		25	26.8	107	75-125
75-27-4	Bromodichloromethane	ND		25	25.8	103	75-125
75-25-2	Bromoform	ND		25	20.0	80	66-125
108-90-7	Chlorobenzene	ND		25	21.8	87	75-125
75-00-3	Chloroethane	ND		25	28.5	114	53-125
67-66-3	Chloroform	ND		25	26.3	105	75-125
75-15-0	Carbon disulfide	ND		125	121	97	51-138
56-23-5	Carbon tetrachloride	ND		25	32.1	128	74-131
75-34-3	1,1-Dichloroethane	ND		25	27.9	112	75-125
75-35-4	1,1-Dichloroethylene	ND		25	27.0	108	66-140
107-06-2	1,2-Dichloroethane	ND		25	26.4	106	75-125
78-87-5	1,2-Dichloropropane	ND		25	27.9	112	75-125
124-48-1	Dibromochloromethane	ND		25	22.7	91	75-125
156-59-2	cis-1,2-Dichloroethylene	ND		25	27.9	112	75-136
10061-01-5	cis-1,3-Dichloropropene	ND		25	23.3	93	71-125
156-60-5	trans-1,2-Dichloroethylene	ND		25	26.1	104	73-125
10061-02-6	trans-1,3-Dichloropropene	ND		25	18.1	72	62-125
100-41-4	Ethylbenzene	ND		25	21.7	87	75-125
591-78-6	2-Hexanone	ND		125	112	90	71-125
108-10-1	4-Methyl-2-pentanone	ND		125	139	111	75-125
74-83-9	Methyl bromide	ND		25	30.6	122	67-146
74-87-3	Methyl chloride	ND		25	30.1	120	47-160
75-09-2	Methylene chloride	ND		25	27.9	112	69-125
78-93-3	Methyl ethyl ketone	ND		125	134	107	70-125
100-42-5	Styrene	ND		25	20.8	83	69-126
71-55-6	1,1,1-Trichloroethane	ND		25	30.3	121	75-131
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	20.2	81	75-125
79-00-5	1,1,2-Trichloroethane	ND		25	21.3	85	75-125
127-18-4	Tetrachloroethylene	ND		25	21.8	87	75-125
108-88-3	Toluene	ND		25	22.0	88	75-125
79-01-6	Trichloroethylene	1.3	J	25	28.4	108	75-125
75-01-4	Vinyl chloride	ND		25	25.6	102	52-169
1330-20-7	Xylene (total)	ND		75	66.7	89	75-125

Matrix Spike Summary

Page 2 of 2

Job Number: F13633

Account: ITVAVAB Shaw E & I, Inc.

Project: Site 7-Cherry Point

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F13674-1MS	B0010392.D	1	06/28/02	JG	n/a	n/a	VB457
F13674-1	B0010389.D	1	06/28/02	JG	n/a	n/a	VB457

The QC reported here applies to the following samples:

Method: SW846 8260B

F13633-1, F13633-2, F13633-3

CAS No.	Surrogate Recoveries	MS	F13674-1	Limits
1868-53-7	Dibromofluoromethane	104%	103%	80-120%
17060-07-0	1,2-Dichloroethane-D4	101%	99%	80-120%
2037-26-5	Toluene-D8	86%	87%	80-120%
460-00-4	4-Bromofluorobenzene	89%	94%	80-120%

Instrument Performance Check (BFB)

Page 1 of 2

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Sample: VB457-BFB Injection Date: 06/28/02
Lab File ID: B0010376.D Injection Time: 11:45
Instrument ID: GCMSB

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	40186	22.5	Pass
75	30.0 - 60.0% of mass 95	91256	51.1	Pass
95	Base peak, 100% relative abundance	178538	100.0	Pass
96	5.0 - 9.0% of mass 95	12479	7.0	Pass
173	Less than 2.0% of mass 174	578	0.32 (0.48) ^a	Pass
174	50.0 - 100.0% of mass 95	121106	67.8	Pass
175	5.0 - 9.0% of mass 174	8806	4.9 (7.3) ^a	Pass
176	95.0 - 101.0% of mass 174	115602	64.7 (95.5) ^a	Pass
177	5.0 - 9.0% of mass 176	7166	4.0 (6.2) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VB457-CC420	B0010377.D	06/28/02	12:37	00:52	Continuing cal 20PPB
VB457-BS	B0010378.D	06/28/02	13:05	01:20	Blank Spike
VB459-BS	B0010378.D	06/28/02	13:05	01:20	Blank Spike
VB458-BS	B0010378.D	06/28/02	13:05	01:20	Blank Spike
VB457-MB	B0010379.D	06/28/02	13:33	01:48	Method Blank
VB459-MB	B0010379.D	06/28/02	13:33	01:48	Method Blank
VB458-MB	B0010379.D	06/28/02	13:33	01:48	Method Blank
F13633-3	B0010380.D	06/28/02	14:01	02:16	FIELD BLANK-04
F13633-1	B0010381.D	06/28/02	14:29	02:44	7GW09-04
F13633-2	B0010382.D	06/28/02	14:57	03:12	DUP-04
F13633-2DUP	B0010383.D	06/28/02	15:25	03:40	Duplicate
F13661-2	B0010384.D	06/28/02	15:54	04:09	(used for QC only; not part of job F13633)
ZZZZZZ	B0010385.D	06/28/02	16:22	04:37	(unrelated sample)
ZZZZZZ	B0010386.D	06/28/02	16:51	05:06	(unrelated sample)
F13661-2MS	B0010387.D	06/28/02	17:19	05:34	Matrix Spike
F13661-2MSD	B0010388.D	06/28/02	17:46	06:01	Matrix Spike Duplicate
F13674-1	B0010389.D	06/28/02	18:14	06:29	(used for QC only; not part of job F13633)
ZZZZZZ	B0010390.D	06/28/02	18:42	06:57	(unrelated sample)
ZZZZZZ	B0010391.D	06/28/02	19:10	07:25	(unrelated sample)
F13674-1MS	B0010392.D	06/28/02	19:38	07:53	Matrix Spike
ZZZZZZ	B0010393.D	06/28/02	20:06	08:21	(unrelated sample)
ZZZZZZ	B0010394.D	06/28/02	20:34	08:49	(unrelated sample)
ZZZZZZ	B0010395.D	06/28/02	21:02	09:17	(unrelated sample)
ZZZZZZ	B0010396.D	06/28/02	21:30	09:45	(unrelated sample)

Instrument Performance Check (BFB)

Page 2 of 2

Job Number: F13633

Account: ITVAVAB Shaw E & I, Inc.

Project: Site 7-Cherry Point

Sample: VB457-BFB
Lab File ID: B0010376.D
Instrument ID: GCM5B

Injection Date: 06/28/02

Injection Time: 11:45

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	B0010397.D	06/28/02	21:58	10:13	(unrelated sample)
ZZZZZZ	B0010398.D	06/28/02	22:26	10:41	(unrelated sample)
ZZZZZZ	B0010399.D	06/28/02	22:54	11:09	(unrelated sample)
F13688-1	B0010400.D	06/28/02	23:22	11:37	(used for QC only; not part of job F13633)
F13688-1MS	B0010401.D	06/28/02	23:50	12:05	Matrix Spike
F13688-1MSD	B0010402.D	06/29/02	00:19	12:34	Matrix Spike Duplicate

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Sample: VB420-BFB
Lab File ID: B0009711.D
Instrument ID: GCMSB
Injection Date: 05/15/02
Injection Time: 10:51

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	27901	20.3	Pass
75	30.0 - 60.0% of mass 95	65410	47.7	Pass
95	Base peak, 100% relative abundance	137266	100.0	Pass
96	5.0 - 9.0% of mass 95	9133	6.7	Pass
173	Less than 2.0% of mass 174	477	0.35 (0.54) ^a	Pass
174	50.0 - 100.0% of mass 95	88229	64.3	Pass
175	5.0 - 9.0% of mass 174	6279	4.6 (7.1) ^a	Pass
176	95.0 - 101.0% of mass 174	83970	61.2 (95.2) ^a	Pass
177	5.0 - 9.0% of mass 176	6091	4.4 (7.3) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VB420-IC420	B0009712.D	05/15/02	11:18	00:27	Initial cal 1PPB
VB420-IC420	B0009713.D	05/15/02	11:49	00:58	Initial cal 5PPB
VB420-IC420	B0009714.D	05/15/02	12:18	01:27	Initial cal 20PPB
VB420-ICC420	B0009715.D	05/15/02	12:46	01:55	Initial cal 40PPB
VB420-IC420	B0009716.D	05/15/02	13:14	02:23	Initial cal 70PPB
VB420-IC420	B0009717.D	05/15/02	13:43	02:52	Initial cal 100PPB
VB420-BS	B0009719.D	05/15/02	14:42	03:51	Blank Spike
VB420-MB	B0009720.D	05/15/02	15:10	04:19	Method Blank
ZZZZZZ	B0009721.D	05/15/02	15:39	04:48	(unrelated sample)
ZZZZZZ	B0009722.D	05/15/02	16:07	05:16	(unrelated sample)
ZZZZZZ	B0009723.D	05/15/02	16:36	05:45	(unrelated sample)
ZZZZZZ	B0009724.D	05/15/02	17:06	06:15	(unrelated sample)
ZZZZZZ	B0009725.D	05/15/02	17:34	06:43	(unrelated sample)
F13180-8	B0009726.D	05/15/02	18:03	07:12	(used for QC only; not part of job F13633)
F13180-8MS	B0009727.D	05/15/02	18:30	07:39	Matrix Spike
F13180-8MSD	B0009728.D	05/15/02	18:58	08:07	Matrix Spike Duplicate
ZZZZZZ	B0009729.D	05/15/02	19:26	08:35	(unrelated sample)
ZZZZZZ	B0009730.D	05/15/02	19:54	09:03	(unrelated sample)
ZZZZZZ	B0009731.D	05/15/02	20:22	09:31	(unrelated sample)
ZZZZZZ	B0009732.D	05/15/02	20:50	09:59	(unrelated sample)
ZZZZZZ	B0009733.D	05/15/02	21:18	10:27	(unrelated sample)

Volatile Internal Standard Area Summary

Page 1 of 2

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Check Std:	VB457-CC420	Injection Date:	06/28/02
Lab File ID:	B0010377.D	Injection Time:	12:37
Instrument ID:	GCMSB	Method:	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	2297289	10.06	1903755	13.32	1038499	15.87
Upper Limit ^a	4594578	10.56	3807510	13.82	2076998	16.37
Lower Limit ^b	1148645	9.56	951878	12.82	519250	15.37

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
VB458-BS	2319267	10.06	1982707	13.32	1098852	15.87
VB459-BS	2319267	10.06	1982707	13.32	1098852	15.87
VB457-BS	2319267	10.06	1982707	13.32	1098852	15.87
VB458-MB	2234854	10.06	1835976	13.32	908098	15.87
VB457-MB	2234854	10.06	1835976	13.32	908098	15.87
VB459-MB	2234854	10.06	1835976	13.32	908098	15.87
F13633-3 ^c	2057852	10.06	1724420	13.32	862870	15.87
F13633-1	2007719	10.06	1732555	13.32	897443	15.87
F13633-2	2064917	10.06	1772768	13.32	934850	15.87
F13633-2DUP	2162611	10.06	1849981	13.32	950456	15.87
F13661-2	2197114	10.06	1807392	13.32	903174	15.87
ZZZZZZ	2071499	10.06	1721513	13.32	857337	15.87
ZZZZZZ	2006751	10.06	1651319	13.32	827669	15.87
F13661-2MS	2045597	10.06	1760465	13.32	1000851	15.87
F13661-2MSD	2216841	10.06	1916950	13.32	1059875	15.87
F13674-1	2112623	10.07	1755459	13.32	877324	15.87
ZZZZZZ	2013336	10.06	1674515	13.32	827898	15.87
ZZZZZZ	1953143	10.06	1620548	13.32	838355	15.87
F13674-1MS	2027868	10.06	1740518	13.32	981348	15.87
ZZZZZZ	2040920	10.06	1684174	13.32	841122	15.87
ZZZZZZ	1938777	10.06	1608277	13.32	793948	15.87
ZZZZZZ	1917020	10.06	1592234	13.32	788210	15.87
ZZZZZZ	1766420	10.06	1504906	13.32	742495	15.87
ZZZZZZ	1759315	10.06	1479865	13.32	736861	15.87
ZZZZZZ	1731694	10.06	1436634	13.32	721994	15.87
ZZZZZZ	1686300	10.06	1406535	13.32	695462	15.87
F13688-1	1660254	10.06	1409325	13.32	702736	15.87
F13688-1MS	1746874	10.06	1550290	13.32	893022	15.87
F13688-1MSD	1892075	10.06	1639609	13.32	945095	15.87

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.

Volatile Internal Standard Area Summary

Page 2 of 2

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Check Std:	VB457-CC420	Injection Date:	06/28/02
Lab File ID:	B0010377.D	Injection Time:	12:37
Instrument ID:	GCMSB	Method:	SW846 8260B

Lab	IS 1		IS 2		IS 3	
Sample ID	AREA	RT	AREA	RT	AREA	RT

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

(c) Confirmed by reanalysis.

Volatile Surrogate Recovery Summary

Page 1 of 1

Job Number: F13633

Account: ITVAVAB Shaw E & I, Inc.

Project: Site 7-Cherry Point

Method: SW846 8260B

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
F13633-1	B0010381.D	104.0	103.0	85.0	94.0
F13633-2	B0010382.D	104.0	102.0	86.0	95.0
F13633-3	B0010380.D	105.0	102.0	86.0	94.0
F13633-2DUP	B0010383.D	102.0	98.0	85.0	95.0
F13674-1MS	B0010392.D	104.0	101.0	86.0	89.0
VB457-BS	B0010378.D	104.0	99.0	87.0	90.0
VB457-MB	B0010379.D	104.0	98.0	87.0	95.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	80-120%

Initial Calibration Summary

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Sample: VB420-ICC420
Lab FileID: B0009715.D

Page 1 of 2

Response Factor Report MSVOA4

Method : C:\MSDCHEM\1\METHODS\8260.M (RTE Integrator)
Title : EPA 624 & SWA 5030B/8260B
Last Update : Thu May 16 13:54:24 2002
Response via : Initial Calibration

Calibration Files

1 =B0009712.D 2 =B0009713.D 3 =B0009714.D
4 =B0009715.D 5 =B0009716.D 6 =B0009717.D

Compound	1	2	3	4	5	6	Avg	%RSD
-----ISTD-----								
1) I Fluorobenzene								
2) Dichlorodifluoromet	0.265	0.279	0.278	0.271	0.262	0.248	0.267	4.32
3) P Chloromethane	0.360	0.379	0.335	0.317	0.297	0.273	0.327	12.05
4) C Vinyl Chloride	0.362	0.352	0.332	0.320	0.297	0.278	0.323	9.93
5) Bromomethane	0.175	0.162	0.148	0.148	0.131	0.122	0.148	13.18
6) Chloroethane		0.168	0.155	0.157	0.143	0.134	0.151	8.63
7) Trichlorofluorometh		0.271	0.286	0.291	0.286	0.283	0.283	2.63
8) Acrolein	0.017	0.015	0.014	0.015	0.016	0.016	0.016	6.94
9) C 1,1-Dichloroethene	0.391	0.407	0.407	0.404	0.406	0.409	0.404	1.59
10) Freon 113		0.187	0.183	0.173	0.162	0.162	0.173	6.62
11) Acetone		0.092	0.075	0.070	0.070	0.069	0.075	12.65
12) Iodomethane	0.184	0.195	0.223	0.250	0.253	0.266	0.228	14.73
13) Methyl acetate	0.184	0.189	0.186	0.184	0.186	0.183	0.185	1.28
14) Carbon Disulfide	1.016	0.897	0.821	0.819	0.810	0.804	0.861	9.63
15) Methylene Chloride		0.435	0.391	0.380	0.377	0.379	0.392	6.20
16) Tert Butyl Alcohol	0.023	0.021	0.020	0.021	0.022	0.022	0.022	4.69
17) trans-1,2-Dichloroe	0.368	0.388	0.369	0.364	0.372	0.372	0.372	2.23
18) Acrylonitrile	0.069	0.076	0.072	0.071	0.072	0.072	0.072	2.91
19) Methyl Tert Butyl E	0.579	0.663	0.630	0.626	0.643	0.649	0.632	4.61
20) Hexane		0.296	0.291	0.280	0.282	0.281	0.286	2.50
21) P 1,1-Dichloroethane	0.432	0.483	0.462	0.463	0.468	0.464	0.462	3.61
22) ETBE	0.684	0.805	0.783	0.794	0.810	0.811	0.781	6.27
23) Vinyl acetate	0.484	0.513	0.488	0.504	0.520	0.528	0.506	3.49
24) Di-isopropyl ether	0.892	0.969	0.947	0.926	0.935	0.914	0.931	2.87
25) 2,2-Dichloropropane	0.209	0.236	0.225	0.225	0.223	0.218	0.222	4.00
26) cis-1,2-Dichloroeth	0.242	0.261	0.250	0.247	0.247	0.244	0.248	2.64
27) 2-Butanone	0.100	0.115	0.115	0.112	0.115	0.110	0.111	5.15
28) Bromochloromethane	0.092	0.112	0.105	0.105	0.104	0.104	0.104	6.26
29) C Chloroform	0.510	0.457	0.437	0.428	0.437	0.437	0.451	6.80
30) Tetrahydrofuran	0.077	0.078	0.073	0.072	0.074	0.070	0.074	3.90
31) 1,1,1-Trichloroetha	0.298	0.338	0.322	0.321	0.322	0.327	0.321	4.10
32) S Dibromofluoromethan	0.258	0.256	0.253	0.255	0.255	0.255	0.255	0.73
33) Cyclohexane	0.389	0.418	0.403	0.393	0.393	0.391	0.398	2.77
34) 1,1-Dichloropropene	0.305	0.304	0.307	0.300	0.309	0.310	0.306	1.20
35) Carbon Tetrachlorid	0.222	0.243	0.243	0.241	0.252	0.260	0.244	5.18
36) S 1,2-Dichloroethane-	0.322	0.319	0.328	0.325	0.329	0.335	0.327	1.77
37) TAME	0.601	0.703	0.678	0.676	0.693	0.689	0.673	5.44
38) Benzene	0.940	1.001	0.962	0.939	0.953	0.925	0.953	2.81
39) 1,2-Dichloroethane	0.427	0.382	0.344	0.349	0.355	0.354	0.369	8.52
40) Trichloroethene	0.235	0.244	0.232	0.229	0.232	0.231	0.234	2.40
41) Methylcyclohexane		0.361	0.331	0.322	0.325	0.325	0.333	4.77
42) C 1,2-Dichloropropane	0.240	0.281	0.271	0.262	0.265	0.264	0.264	5.11
43) Dibromomethane	0.133	0.152	0.147	0.144	0.147	0.145	0.145	4.56
44) 1,4-Dioxane	0.003	0.002	0.002	0.002	0.002	0.002	0.002	12.04
45) Bromodichloromethan	0.320	0.340	0.323	0.325	0.335	0.341	0.331	2.74
46) 2-Nitropropane	0.051	0.053	0.059	0.061	0.064	0.064	0.059	9.54

Initial Calibration Summary

Page 2 of 2

Job Number: F13633
 Account: ITVAVAB Shaw E & I, Inc.
 Project: Site 7-Cherry Point

Sample: VB420-ICC420
 Lab FileID: B0009715.D

47)	2-Chloroethyl vinyl	0.090	0.124	0.133	0.137	0.140	0.138	0.127	14.77
48)	4-Methyl-2-pentanone	0.227	0.250	0.252	0.257	0.254	0.241	0.247	4.55
49)	cis-1,3-Dichloropro	0.351	0.391	0.390	0.394	0.408	0.404	0.390	5.24
50) I	Chlorobenzene-d5	-----ISTD-----							
51) S	Toluene-d8	1.433	1.463	1.442	1.434	1.438	1.450	1.443	0.78
52) C	Toluene	1.403	1.517	1.442	1.424	1.453	1.409	1.441	2.91
53)	trans-1,3-Dichlorop	0.451	0.498	0.517	0.532	0.557	0.545	0.517	7.43
54)	1,1,2-Trichloroetha	0.242	0.285	0.279	0.270	0.277	0.268	0.270	5.59
55)	Tetrachloroethene	0.282	0.292	0.279	0.272	0.279	0.268	0.279	3.01
56)	2-hexanone	0.215	0.241	0.244	0.251	0.255	0.240	0.241	5.82
57)	1,3-Dichloropropane	0.535	0.579	0.552	0.546	0.564	0.549	0.554	2.77
58)	Dibromochloromethan	0.251	0.289	0.296	0.302	0.317	0.316	0.295	8.27
59)	1,2-Dibromoethane	0.266	0.311	0.312	0.302	0.312	0.306	0.302	5.95
60)	1-Chlorohexane	0.521	0.457	0.439	0.432	0.443	0.430	0.454	7.59
61) P	Chlorobenzene	0.900	0.956	0.913	0.888	0.901	0.872	0.905	3.13
62)	1,1,1,2-Tetrachloro	0.278	0.302	0.300	0.298	0.307	0.302	0.298	3.36
63) C	Ethylbenzene	1.608	1.664	1.617	1.607	1.649	1.612	1.626	1.49
64)	m,p-Xylene	1.217	1.271	1.262	1.264	1.284	1.225	1.254	2.13
65)	o-Xylene	1.231	1.366	1.320	1.309	1.347	1.296	1.312	3.56
66)	Styrene	0.791	0.955	0.968	0.974	1.007	0.956	0.942	8.11
67) P	Bromoform	0.122	0.154	0.165	0.175	0.188	0.185	0.165	14.78
68) I	1,4-Dichlorobenzene-d	-----ISTD-----							
69)	Isopropylbenzene	2.922	2.739	2.627	2.514	2.612	2.586	2.667	5.43
70)	Cyclohexanone		0.024	0.020	0.019	0.020	0.020	0.021	8.65
71) S	4-Bromofluorobenzen	1.156	1.121	1.114	1.102	1.114	1.151	1.126	1.95
72)	Bromobenzene	0.729	0.680	0.663	0.640	0.637	0.611	0.660	6.26
73) P	1,1,2,2-Tetrachloro	0.819	0.855	0.826	0.795	0.813	0.801	0.818	2.61
74)	trans-1,4-Dichloro-		0.047	0.066	0.097	0.130	0.140	0.096	41.57
75)	1,2,3-Trichloroprop	0.195	0.222	0.208	0.204	0.205	0.202	0.206	4.27
76)	n-Propylbenzene	4.105	3.737	3.629	3.510	3.561	3.448	3.665	6.48
77)	2-Chlorotoluene	2.671	2.565	2.450	2.417	2.493	2.397	2.499	4.14
78)	4-Chlorotoluene	2.347	2.391	2.258	2.209	2.280	2.277	2.293	2.85
79)	1,3,5-Trimethylbenz	2.562	2.292	2.256	2.240	2.295	2.208	2.309	5.56
80)	sec-Butylbenzene	3.329	2.795	2.717	2.650	2.689	2.635	2.803	9.42
81)	1,3-Dichlorobenzene	1.288	1.248	1.254	1.225	1.238	1.204	1.243	2.30
82)	4-Isopropyltoluene	2.325	1.996	2.013	2.002	2.026	2.009	2.062	6.27
83)	1,4-Dichlorobenzene	1.489	1.313	1.308	1.277	1.275	1.235	1.316	6.76
84)	tert-Butylbenzene	1.672	1.414	1.391	1.362	1.421	1.406	1.444	7.85
85)	n-Butylbenzene	2.726	2.153	2.189	2.204	2.264	2.215	2.292	9.40
86)	1,2-Dichlorobenzene	1.315	1.230	1.228	1.210	1.210	1.172	1.228	3.90
87)	1,2,4-Trimethylbenz	2.553	2.424	2.354	2.315	2.388	2.364	2.400	3.48
88)	1,2-Dibromo-3-Chlor	0.183	0.129	0.128	0.132	0.138	0.139	0.142	14.55
89)	1,2,4-Trichlorobenz	0.692	0.537	0.602	0.632	0.655	0.630	0.625	8.39
90)	Hexachlorobutadiene		0.246	0.231	0.238	0.241	0.229	0.237	2.85
91)	Naphthalene		1.408	1.532	1.652	1.722	1.695	1.602	8.14
92)	1,2,3-Trichlorobenz		0.467	0.521	0.556	0.571	0.549	0.533	7.75

Average % RSD = 6.0

 (#) = Out of Range

8260.M

Thu May 16 15:30:28 2002 RPT1

Continuing Calibration Summary

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Sample: VB457-CC420
Lab FileID: B0010377.D

Page 1 of 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062802\B0010377.D

Vial: 1

Acq On : 28 Jun 2002 12:37 pm

Operator: JuanG

Sample : CC420-20ppb

Inst : MSV0A4

Misc : ms1589,vb457,,,,,

Multiplr: 1.00

MS Integration Params: Rteint.p

Method : C:\MSDCHEM\1\METHODS\8260QUANT.M (RTE Integrator)

Title : EPA 624 & SWA 5030B/8260B

Last Update : Thu May 30 15:32:06 2002

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Fluorobenzene	1.000	1.000	0.0	106	-0.01
2	Dichlorodifluoromethane	0.267	0.252	5.6	96	-0.01
3 P	Chloromethane	0.327	0.370	-13.1	118	0.00
4 C	Vinyl Chloride	0.323	0.344	-6.5	110	0.00
5	Bromomethane	0.148	0.225	-52.0#	161	0.01
6	Chloroethane	0.151	0.169	-11.9	116	0.00
7	Trichlorofluoromethane	0.283	0.360	-27.2#	134	-0.02
8	Acrolein	0.016	0.032	-100.0#	238#	-0.01
9 C	1,1-Dichloroethene	0.404	0.451	-11.6	118	0.00
10	Freon 113	0.173	0.174	-0.6	101	-0.02
11	Acetone	0.075	0.084	-12.0	119	0.00
12	Iodomethane	0.228	0.114	50.0#	55	-0.02
13	Methyl acetate	0.185	0.203	-9.7	116	0.00
14	Carbon Disulfide	0.861	0.966	-12.2	125	-0.02
15	Methylene Chloride	0.392	0.460	-17.3	125	-0.06
16	Tert Butyl Alcohol	0.022	0.021	4.5	111	-0.01
17	trans-1,2-Dichloroethene	0.372	0.398	-7.0	114	0.00
18	Acrylonitrile	0.072	0.104	-44.4#	154	0.00
19	Methyl Tert Butyl Ether	0.632	0.587	7.1	99	0.00
20	Hexane	0.286	0.338	-18.2	123	0.00
21 P	1,1-Dichloroethane	0.462	0.509	-10.2	117	0.00
22	ETBE	0.781	0.672	14.0	91	-0.02
23	Vinyl acetate	0.506	0.515	-1.8	112	0.00
24	Di-isopropyl ether	0.931	1.014	-8.9	114	0.00
25	2,2-Dichloropropane	0.222	0.208	6.3	98	0.00
26	cis-1,2-Dichloroethene	0.248	0.273	-10.1	116	0.00
27	2-Butanone	0.111	0.122	-9.9	112	0.00
28	Bromochloromethane	0.104	0.120	-15.4	122	-0.01
29 C	Chloroform	0.451	0.459	-1.8	112	-0.01
30	Tetrahydrofuran	0.074	0.078	-5.4	114	0.00
31	1,1,1-Trichloroethane	0.321	0.358	-11.5	118	-0.01
32 S	Dibromofluoromethane	0.255	0.263	-3.1	111	0.00
33	Cyclohexane	0.398	0.392	1.5	103	0.00
34	1,1-Dichloropropene	0.306	0.322	-5.2	111	0.00
35	Carbon Tetrachloride	0.244	0.304	-24.6#	133	-0.01
36 S	1,2-Dichloroethane-d4	0.327	0.336	-2.8	109	0.00
37	TAME	0.673	0.544	19.2	85	-0.02
38	Benzene	0.953	1.033	-8.4	114	0.00
39	1,2-Dichloroethane	0.369	0.393	-6.5	121	-0.01
40	Trichloroethene	0.234	0.249	-6.4	114	0.00
41	Methylcyclohexane	0.333	0.349	-4.8	112	-0.01
42 C	1,2-Dichloropropane	0.264	0.283	-7.2	111	0.00

Continuing Calibration Summary

Job Number: F13633
Account: ITVAVAB Shaw E & I, Inc.
Project: Site 7-Cherry Point

Sample: VB457-CC420
Lab FileID: B0010377.D

Page 2 of 2

43	Dibromomethane	0.145	0.163	-12.4	117	0.00
44	1,4-Dioxane	0.002	0.002	0.0	110	-0.01
45	Bromodichloromethane	0.331	0.356	-7.6	117	-0.01
46	2-Nitropropane	0.059	0.074	-25.4#	133	-0.01
47	2-Chloroethyl vinyl ether	0.127	0.090	29.1#	72	0.00
48	4-Methyl-2-pentanone	0.247	0.268	-8.5	113	-0.01
49	cis-1,3-Dichloropropene	0.390	0.408	-4.6	111	-0.01
50 I	Chlorobenzene-d5	1.000	1.000	0.0	129	0.00
51 S	Toluene-d8	1.443	1.259	12.8	113	-0.01
52 C	Toluene	1.441	1.337	7.2	120	0.00
53	trans-1,3-Dichloropropene	0.517	0.440	14.9	110	-0.01
54	1,1,2-Trichloroethane	0.270	0.242	10.4	112	-0.01
55	Tetrachloroethene	0.279	0.250	10.4	116	-0.01
56	2-hexanone	0.241	0.219	9.1	116	0.00
57	1,3-Dichloropropane	0.554	0.476	14.1	111	0.00
58	Dibromochloromethane	0.295	0.292	1.0	127	0.00
59	1,2-Dibromoethane	0.302	0.259	14.2	107	-0.01
60	1-Chlorohexane	0.454	0.382	15.9	112	0.00
61 P	Chlorobenzene	0.905	0.813	10.2	115	0.00
62	1,1,1,2-Tetrachloroethane	0.298	0.273	8.4	118	-0.01
63 C	Ethylbenzene	1.626	1.461	10.1	117	0.00
64	m,p-Xylene	1.254	1.134	9.6	116	-0.01
65	o-Xylene	1.312	1.156	11.9	113	-0.01
66	Styrene	0.942	0.878	6.8	117	-0.01
67 P	Bromoform	0.165	0.156	5.5	121	0.00
68 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	132	0.00
69	Isopropylbenzene	2.667	2.244	15.9	112	-0.01
70	Cyclohexanone	0.021	0.019	9.5	124	0.00
71 S	4-Bromofluorobenzene	1.126	1.028	8.7	121	-0.01
72	Bromobenzene	0.660	0.588	10.9	117	0.00
73 P	1,1,2,2-Tetrachloroethane	0.818	0.680	16.9	108	0.00
74	trans-1,4-Dichloro-2-Butene	0.096	0.167	-74.0#	331#	0.00
75	1,2,3-Trichloropropane	0.206	0.178	13.6	113	0.00
76	n-Propylbenzene	3.665	3.254	11.2	118	-0.01
77	2-Chlorotoluene	2.499	2.175	13.0	117	0.00
78	4-Chlorotoluene	2.293	1.953	14.8	114	-0.01
79	1,3,5-Trimethylbenzene	2.309	1.994	13.6	116	0.00
80	sec-Butylbenzene	2.803	2.456	12.4	119	0.00
81	1,3-Dichlorobenzene	1.243	1.127	9.3	118	0.00
82	4-Isopropyltoluene	2.062	1.952	5.3	128	0.00
83	1,4-Dichlorobenzene	1.316	1.181	10.3	119	-0.01
84	tert-Butylbenzene	1.444	1.237	14.3	117	-0.01
85	n-Butylbenzene	2.292	2.101	8.3	126	0.00
86	1,2-Dichlorobenzene	1.228	1.106	9.9	119	0.00
87	1,2,4-Trimethylbenzene	2.400	2.089	13.0	117	0.00
88	1,2-Dibromo-3-Chloropropane	0.142	0.113	20.4#	116	-0.01
89	1,2,4-Trichlorobenzene	0.625	0.605	3.2	132	-0.01
90	Hexachlorobutadiene	0.237	0.209	11.8	119	0.00
91	Naphthalene	1.602	1.727	-7.8	148	0.00
92	1,2,3-Trichlorobenzene	0.533	0.550	-3.2	139	0.00

Average % D = 13.3

(#) = Out of Range
B0009714.D 8260QUANT.M

SPCC's out = 0 CCC's out = 0
Mon Jul 01 15:52:41 2002 RPT1



CHAIN OF CUSTODY

4405 VINELAND ROAD • SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #:

ACCUTEST QUOTE

F13633

CLIENT INFORMATION

NAME Shaw ExI
ADDRESS Gas House Rd
CITY Cherry Point STATE NC ZIP 28533
CITY Bill Hayes
SEND REPORT TO:
PHONE # 757-363-7222

FACILITY INFORMATION

PROJECT NAME MCAS Cherry BWT
LOCATION SITE 7
PROJECT NO. 777960-7777569904007
PROJECT NO. NATASHA SULLIVAN
FAX # 410529-7599

ANALYTICAL INFORMATION

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE

FIELD ID / POINT OF COLLECTION

COLLECTION

DATE

TIME

SAMPLED BY:

MATRIX

OF BOTTLES

PRESERVATION

HCl

NaOH

HNO3

H2SO4

NONE

LAB USE ONLY

DATA TURNAROUND INFORMATION

- ☐ STANDARD
☐ 48 HOUR RUSH
☐ 24 HOUR EMERGENCY
☐ OTHER

APPROVED BY:

EMERGENCY OR RUSH IS FAX DATA
UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- ☐ STANDARD
☐ COMMERCIAL "B"
☐ DISK DELIVERABLE
☐ STATE FORMS
☐ OTHER (SPECIFY)

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

RELINQUISHED BY: SAMPLER:

DATE TIME:

RECEIVED BY:

RELINQUISHED BY:

DATE TIME:

RECEIVED BY:

RELINQUISHED BY:

DATE TIME:

RECEIVED BY:

RELINQUISHED BY:

DATE TIME:

RECEIVED BY:

RELINQUISHED BY:

DATE TIME:

RECEIVED BY:

SEAL #

PRESERVE WHERE APPLICABLE

ON ICE

TEMPERATURE

Appendix C

Monitoring Well Gauging Data

Liquid Level Data

Site Name: **SITE 7 OU3 MONITORING WELLS**
MCAS Cherry Point, NC

Date: 26-Apr-02

Well No.	TOC	DTW	GWE	NOTES
OU3-7GW01	9.40	4.86	4.54	
OU3-7GW02	4.82	4.69	0.13	
OU3-7GW04	6.15	6.70	2.70	
OU3-7GW06	6.74	5.79	0.36	
OU3-7GW07	8.8	5.15	1.59	

TOC = Top of Casing (ft)
DTW = Depth to Water (ft)
GWE = Groundwater Elevation (ft)

Liquid Level Data

Site Name: **SITE 7 OU3 MONITORING WELLS**
MCAS Cherry Point, NC

Date: 30-May-02

Well No.	TOC	DTW	GWE	NOTES
OU3-7GW01	9.40	5.05	4.35	
OU3-7GW02	4.82	4.99	-0.17	
OU3-7GW04	6.15	6.10	3.30	
OU3-7GW06	6.74	6.22	-0.07	
OU3-7GW07	8.8	5.74	1.00	

TOC = Top of Casing (ft)
DTW = Depth to Water (ft)
GWE = Groundwater Elevation (ft)

Liquid Level Data

Site Name: **SITE 7 OU3 MONITORING WELLS**
MCAS Cherry Point, NC

Date: 21-Jun-02

Well No.	TOC	DTW	GWE	NOTES
OU3-7GW01	9.40	NM	NM	
OU3-7GW02	4.82	NM	NM	
OU3-7GW04	6.15	NM	NM	
OU3-7GW06	6.74	NM	NM	
OU3-7GW07	8.8	NM	NM	

TOC = Top of Casing (ft)
DTW = Depth to Water (ft)
GWE = Groundwater Elevation (ft)
NM = Not Measured

Liquid Level Data

Site Name: **SITE 7 OU3 MONITORING WELLS**
MCAS Cherry Point, NC

Date: 28-Jun-02

Well No.	TOC	DTW	GWE	NOTES
OU3-7GW01	9.40	NM	NM	
OU3-7GW02	4.82	NM	NM	
OU3-7GW04	6.15	NM	NM	
OU3-7GW06	6.74	NM	NM	
OU3-7GW07	8.8	NM	NM	

TOC = Top of Casing (ft)
DTW = Depth to Water (ft)
GWE = Groundwater Elevation (ft)
NM = Not Measured